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Chief - Good morning!

In advance of your meeting with Jacob Sniff of Suspect Technologies Friday afternoon (2pm?), here is a list of the subjects Jacob is preparing to discuss:

- Overview of Suspect Technologies: Building public surveillance, analytics, and identification products
- Areas of focus:

    -Video Redaction

    -Facial Recognition

    -Image Search

    -Facial Verification

    -Jails/Prisons

    -Emotion Recognition

    -Stadiums/Retail

While Jacob will give you and your team an overview of what they are working on in each of these areas, he is really interested to hear your perspective and get your thoughts.

Also, below are a couple of videos he asked me to pass along regarding surveillance in jails/prisons/holding cells that you and the Sherriff might find interesting:

http://mothership.sg/2016/09/a-prison-without-guards-might-be-a-reality-in-singapore-in-the-near-future/

https://govinsider.asia/smart-gov/exclusive-singapore-wants-a-prison-without-guards/#

Again, many thanks and best regards,

Harry

--

Harry Scott (harry@TheUnofficialSyndicate.com)
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From   Jacob Sniff <jsniff@alumni.princeton.edu>
Subject   **Re: 9/30 Meeting Follow-Up**
To   Michael Botieri <chiefbotieri@plymouthpolice.com>
Date   Tue, 4 Oct 2016 09:55:30 -0400

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>>>> **Subject:** Re: 9/30 Meeting Follow-Up
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>>>> Thought I'd bump. Let me know your thoughts.
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>>>> Best Regards,
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>>>> Jacob
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Plymouth Police Department

20 Long Pond Road

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508-830-4218 X 226

chiefbotieri@plymouthpolice.com

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>>>>> **Sent:** Tuesday, January 24, 2017 10:52 AM
>>>>> **To:** Michael Botieri
>>>>> **Cc:** Ryan Ruggiero
>>>>>
>>>>> **Subject:** Re: 9/30 Meeting Follow-Up
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> See attached signed letter of support.
>
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> Mike
>
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> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Thursday, February 02, 2017 3:32 PM
> **To:** Michael Botieri
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> **Subject:** Re: 9/30 Meeting Follow-Up
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> Chief,
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On Mon, Feb 6, 2017 at 3:46 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Good luck
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Monday, February 06, 2017 3:39 PM
>
> **To:** Michael Botieri
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> Jacob

Mike,

Hope all is well.

Check out our person of interest deployment, Mavs locker room this past weekend. See you at IACP!

https://www.mavsmoneyball.com/2017/9/30/16390764/dallas-mavericks-new-locker-room-is-sleek-and-modern

https://www.usatoday.com/story/sports/ftw/2017/09/30/mark-cuban-introduces-mavs-new-facial-recognition-software/106172740/

http://www.star-telegram.com/sports/nba/dallas-mavericks/article176383961.html

https://twitter.com/TexasMetroNews/status/914223368001474568

Jacob

On Fri, Sep 30, 2016 at 10:57 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> You will
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
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> 508-830-4218 X 226
>
> chiefbotieri@plymouthpolice.com
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Friday, September 30, 2016 8:25 AM
> **To:** Marlene Cavanaugh
> **Cc:** Michael Botieri
> **Subject:** Re: Redacting Software
>
>
> see you later at 2pm est today.
>
>
> On Tue, Sep 27, 2016 at 10:25 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>
> great thank you!
>
> On Tue, Sep 27, 2016 at 10:23 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:
>
>> Good morning.

Yes, to all. We can accommodate all of your needs.

See you on Friday.

Marlene

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 213

cavanaugh@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, September 27, 2016 9:55 AM

To: Marlene Cavanaugh
Subject: Re: Redacting Software

Marlene,

Couple quick questions:

i.) I have a macbook. Was hoping to give a presentation by projector. Do you guys have a projector and hdmi cable?

ii.) Can we connect easily to internet? I have a small youtube demo I wanted to show.

Thanks!

Best,
Jacob

On Tue, Sep 13, 2016 at 10:09 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Great.

See you then.

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

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On Tue, Sep 13, 2016 at 9:16 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

How about we do the 30th at 2:00pm here at the station?

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 213

cavanaugh@plymouthpolice.com

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From <kmmdux77@gmail.com>
Subject **Invitation: Meet w/ Chief Botieri @ Mon Oct 23, 2017 10:30am - 11am (EDT) (Michael Botieri)**
To Michael Botieri <chiefbotieri@plymouthpolice.com>, Jacob Sniff <jsniff@alumni.princeton.edu>
Date Mon, 23 Oct 2017 12:38:36 +0000

Meet w/ Chief Botieri

more details »

When	Mon Oct 23, 2017 10:30am – 11am Eastern Time
Where	Booth 1515 Safariland ([map](#))
Calendar	Michael Botieri
Who	• kmmdux77@gmail.com - organizer
	• Michael Botieri
	• Jacob Sniff

Going? **Yes** - **Maybe** - **No**   more options »

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20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 213

cavanaugh@plymouthpolice.com

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Sent: Monday, September 12, 2016 5:47 PM
To: Marlene Cavanaugh
Subject: Re: Redacting Software

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Mike,

Hope all is well.

Check out our person of interest deployment, Mavs locker room this past weekend. See you at IACP!

https://www.mavsmoneyball.com/2017/9/30/16390764/dallas-mavericks-new-locker-room-is-sleek-and-modern

https://www.usatoday.com/story/sports/ftw/2017/09/30/mark-cuban-introduces-mavs-new-facial-recognition-software/106172740/

http://www.star-telegram.com/sports/nba/dallas-mavericks/article176383961.html

https://twitter.com/TexasMetroNews/status/914223368001474568

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https://www.mavsmoneyball.com/2017/9/30/16390764/dallas-mavericks-new-locker-room-is-sleek-and-modern

https://www.usatoday.com/story/sports/ftw/2017/09/30/mark-cuban-introduces-mavs-new-facial-recognition-software/106172740/

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Subject: Re: Redacting Software

Chief, maybe next mon or tues early again to meet?

On Mon, Oct 30, 2017 at 11:56 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

I know. But I know you said you have similar ones from CVS.

I said "Originally I thought it was Plymouth, Mass. but it's a nearby plymouth in CT. Look forward to discussing similar examples.
"

On Mon, Oct 30, 2017 at 11:55 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Those are both Plymouth Conn.

Chief,

Sounds good.

Btw, have you seen this guy?

https://www.nbcconnecticut.com/news/local/Plymouth-Police-Seek-Robbery-Suspect-454001163.html

http://www.wfsb.com/story/36711665/police-search-for-suspect-in-attempted-robbery-of-a-plymouth-gas-station

Originally I thought it was Plymouth, Mass. but it's a nearby plymouth in CT. Look forward to discussing similar examples.

Jacob

On Mon, Oct 30, 2017 at 8:11 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,

I'll check the schedule to meet later this week.

Thanks

On Oct 30, 2017, at 7:25 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief should we just reschedule? You around later today? It's a longer commute for me, so just want to be sure. I actually don't have power at my house.

On Mon, Oct 30, 2017 at 7:00 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

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On Wed, Oct 25, 2017 at 11:52 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

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Jacob – can we change the time to 8:30am?

Sent: Wednesday, October 25, 2017 10:24 AM

To: Michael Botieri
Subject: Re: Redacting Software

Yes that works. Mon 10/30 at 9 it is!

On Wed, Oct 25, 2017 at 10:22 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,

I can meet Monday morning – does 9am work for you?

Mike

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, October 25, 2017 10:12 AM

To: Michael Botieri
Subject: Re: Redacting Software

Chief, it was nice meeting you. Does sometime on M or Fri. next week work to meet briefly? If not, how about following week M-W, or F?

Best,

Jacob

On Fri, Oct 6, 2017 at 12:24 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

likewise!

On Fri, Oct 6, 2017 at 12:18 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

I look forward to seeing you Jacob.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, October 06, 2017 11:11 AM
To: Michael Botieri
Subject: Re: Redacting Software

Mike,

Hope all is well.

Check out our person of interest deployment, Mavs locker room this past weekend. See you at IACP!

https://www.mavsmoneyball.com/2017/9/30/16390764/dallas-mavericks-new-locker-room-is-sleek-and-modern

https://www.usatoday.com/story/sports/ftw/2017/09/30/mark-cuban-introduces-mavs-new-facial-recognition-software/106172740/

http://www.star-telegram.com/sports/nba/dallas-mavericks/article176383961.html

https://twitter.com/TexasMetroNews/status/914223368001474568

Jacob

On Fri, Sep 30, 2016 at 10:57 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

You will

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, September 30, 2016 8:25 AM
To: Marlene Cavanaugh
Cc: Michael Botieri
Subject: Re: Redacting Software

see you later at 2pm est today.

On Tue, Sep 27, 2016 at 10:25 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

great thank you!

On Tue, Sep 27, 2016 at 10:23 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Good morning.

Yes, to all. We can accommodate all of your needs.

See you on Friday.

Marlene

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 213

cavanaugh@plymouthpolice.com

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Sent: Tuesday, September 27, 2016 9:55 AM

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Subject: Re: Redacting Software

Marlene,

Couple quick questions:

i.) I have a macbook. Was hoping to give a presentation by projector. Do you guys have a projector and hdmi cable?

ii.) Can we connect easily to internet? I have a small youtube demo I wanted to show.

Thanks!

Best,
Jacob

On Tue, Sep 13, 2016 at 10:09 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Great.

See you then.

Marlene Cavanaugh

Plymouth Police Department

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Plymouth, MA 02360

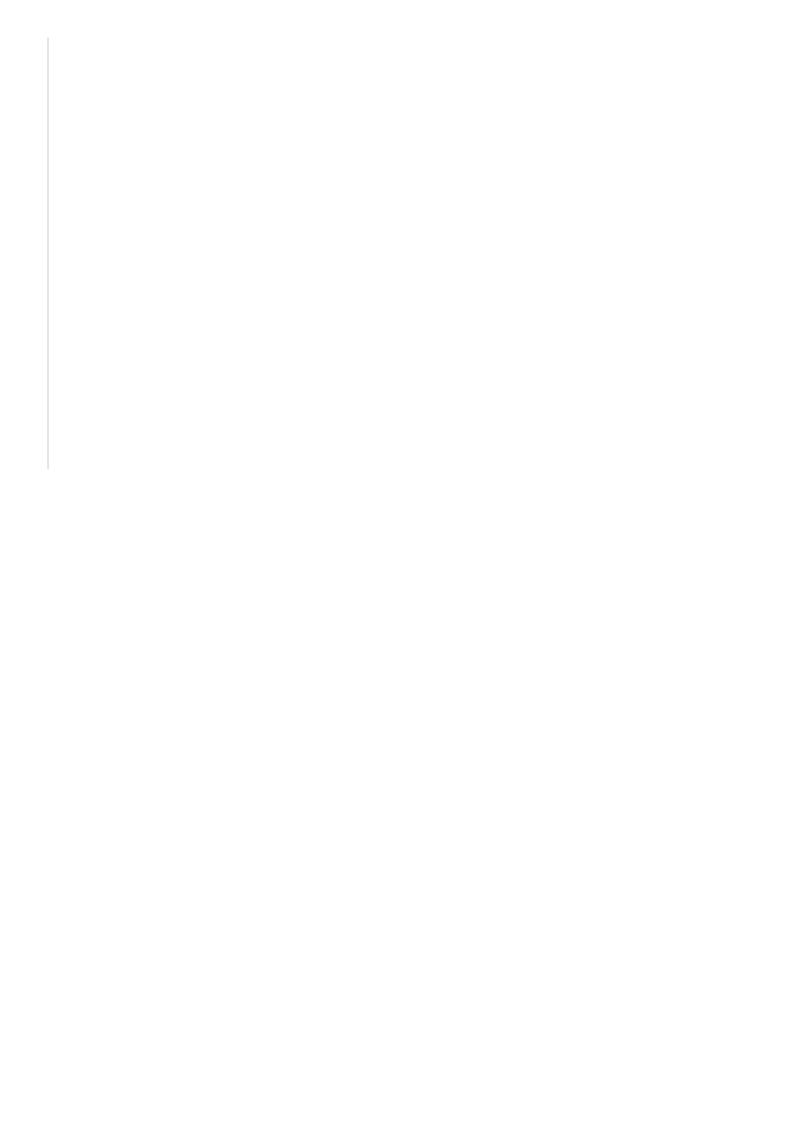508-830-4218 X 213

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Subject: Re: Redacting Software

yes that works.

On Tue, Sep 13, 2016 at 9:16 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

How about we do the 30th at 2:00pm here at the station?

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

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508-830-4218 X 213

cavanaugh@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Monday, September 12, 2016 5:47 PM
To: Marlene Cavanaugh
Subject: Re: Redacting Software

You guys are like an hr or so away from me. Assuming you want to meet in Plymouth, how about meeting on 28th or 30th early afternoon?

Best Regards,
Jacob

On Mon, Sep 12, 2016 at 5:37 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Chief prefers a meeting in person.

See you tomorrow at 2:00?

On Sep 12, 2016, at 5:04 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

> One hour at most is sufficient. Does he want to meet in person or on phone? If on phone, I suggest using skype or similar, so I can screen-share the technology.

> On Mon, Sep 12, 2016 at 5:01 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

> Not sure of what the meeting entails. How much time do you need allotted?

> On Sep 12, 2016, at 4:40 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

>> Hi Marlene,

>> 2pm should work fine tmr. Do you want to set-up a conference?

>> Thanks!
>> Jacob

>> On Mon, Sep 12, 2016 at 4:29 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

>> Hi.

>> I was just checking with Chief Botieri. Looks like he has between 2-4:00 tomorrow, or next Thursday after 2:00.

>> I know you mentioned Wed and/or Fri, but it looks like we would have to wait a couple of weeks if that is the case (the 28th or 30th).

>> Let me know your thoughts.

>> Thanks,

>> Marlene

>> *Marlene Cavanaugh*

>> Plymouth Police Department

>> 20 Long Pond Road

>> Plymouth, MA 02360

>> 508-830-4218 X 213

>> cavanaugh@plymouthpolice.com

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>> **Subject:** Re: Redacting Software

Sorry Mike, my phone has had better days. Trying to get a new one this week. This email is super reliable though. Yes, Marlene, when works to chat? Maybe sometime Wed or Fri afternoon est?

Thanks!

On Mon, Sep 12, 2016 at 3:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,

I received your information from my good friend Harry Scott. I would like to set up a time to meet regarding you new technology. I tried your cell – however – I was not able to leave a message. Please contact my Administrative Assistant (Marlene Cavanaugh), at (508) 830-4218 ext. 226 or feel free to contact me through this email and I will pass along to her for scheduling.

Thanks

Mike

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

See you guys tmr!

On Wed, Nov 8, 2017 at 11:16 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
ok!

On Wed, Nov 8, 2017 at 11:05 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Hi,

Yes. Thursday, November 16 at 2:00 PM here.   See you then. Thank you.

Nancy Dillon

Administrative Secretary

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 272

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, November 08, 2017 10:56 AM
To: Nancy Dillon

Cc: Michael Botieri
Subject: Re: Redacting Software

Thurs at 2 works well. Can we plan for that?

Jacob

On Wed, Nov 8, 2017 at 10:27 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Hello, Mr. Sniff,

I checked with Chief Botieri, and he is available Wednesday or Thursday, November 15 or 16 at 2:00 PM. Unfortunately his schedule is quite full, and he does not have any morning availability.

 Please let me know if you are available on either date at 2:00 PM.

Thank you.

Nancy Dillon

Administrative Secretary

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 272

To: Michael Botieri
Cc: Nancy Dillon
Subject: Re: Redacting Software

Chief, let's just aim for next week if it works for you? fri is difficult now.

I'm open almost everything morning right now next week.

On Mon, Nov 6, 2017 at 10:07 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, Wed or Fri morning would work this week.

If not, sometime next week?

Best,

Jacob

On Mon, Nov 6, 2017 at 9:17 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob – sorry, I have been very busy. Send me a couple dates and times and I will make sure that the Dt. Lt. can show you what we have for video.

Thanks

Michael E. Botieri

Chief of Police

To: Michael Botieri
Cc: Nancy Dillon
Subject: Re: Redacting Software

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Mike,

Hope all is well.

Check out our person of interest deployment, Mavs locker room this past weekend. See you at IACP!

https://www.mavsmoneyball.com/2017/9/30/16390764/dallas-mavericks-new-locker-room-is-sleek-and-modern

https://www.usatoday.com/story/sports/ftw/2017/09/30/mark-cuban-introduces-mavs-new-facial-recognition-software/106172740/

http://www.star-telegram.com/sports/nba/dallas-mavericks/article176383961.html

https://twitter.com/TexasMetroNews/status/914223368001474568

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Good morning.

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Marlene Cavanaugh

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>> Let me know your thoughts.
>>
>>
>> Thanks,
>>
>> Marlene
>>
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>> *Marlene Cavanaugh*
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>> Plymouth Police Department
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>> 20 Long Pond Road
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>> 508-830-4218 X 213
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>> cavanaugh@plymouthpolice.com
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Jacob,

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Thanks

Mike

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

Hey,

Either of you guys sending me the files? Was hoping to look at this weekend.

Good weekend!

Best,
Jacob

On Tue, Nov 15, 2016 at 2:37 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Great Thanks
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> *Chief Michael E. Botieri*
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> **Sent:** Tuesday, November 15, 2016 2:17 PM
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> **To:** Michael Botieri
> **Cc:** Ryan Ruggiero; Harry @ TUS
> **Subject:** Re: 9/30 Meeting Follow-Up
>
>
> Mike,
>
> Yes we would. Let me reach out again about it. We first have to make it work on iphone/ipad, which will take sometime.
>
> We are still at least 3 months off from having it work on such a device.
>
>
> Best,
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Sent: Sunday, November 13, 2016 11:06 PM
To: Michael Botieri
Cc: Ryan Ruggiero; Harry @ TUS
Subject: Re: 9/30 Meeting Follow-Up

Hi Chief Botieri,

Hope all is well.

We are finishing developing and bench-marking our facial recognition solution; we hope to launch it early to mid 2017. I was wondering the following regarding deployment:

i.) Would the best possible platform be IPAD? Do you see any use on iPhone or BlackBerry?

ii.) Do the officers have IPADS or would you have to buy them for this use case?

iii.) Do you know if a lot of agencies would be interested in the solution?

Thanks!

Jacob

On Tue, Oct 4, 2016 at 9:55 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

great thanks a lot! will be in touch.

On Mon, Oct 3, 2016 at 6:10 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,
We thoroughly enjoyed meeting with you and I would definitely like to help when you are ready to roll out your software.

Mike

> On Oct 3, 2016, at 5:30 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>
> Chief Botieri and Ryan,
>
> It was really nice meeting both of you last week.
>
> I think we should meet again in a month or two, to discuss more of the following and possibly try some of your data on some of the below:
>
> -facial recognition on IPAD in field
> -facial verification/recognition in building
> -emotion recognition for possible lie detection (along with hand on face analysis)
> -image search --eg phone or not in video.
>
> I also made a note to look into the hospital/retail redaction use case Chief. If you know of any place to start, please let me know.
>
> Also Chief, you seemed pretty keen on the use of facial recognition in stadiums. If you know of any place to start, please let me know.
>
> Thanks!
> Best Regards,
> Jacob

ok thank you!!!

On Fri, Nov 17, 2017 at 4:27 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Jacob – Here you go.
>
> Good luck,
>
> Michael E. Botieri
>
> Chief of Police
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Friday, November 17, 2017 4:15 PM
> **To:** Michael Botieri; Ryan Ruggiero
>
> **Subject:** Re: 9/30 Meeting Follow-Up
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Hi Chief Botieri,

Hope all is well.

We are finishing developing and bench-marking our facial recognition solution; we hope to launch it early to mid 2017. I was wondering the following regarding deployment:

i.) Would the best possible platform be IPAD? Do you see any use on iPhone or BlackBerry?

ii.) Do the officers have IPADS or would you have to buy them for this use case?

iii.) Do you know if a lot of agencies would be interested in the solution?

Thanks!

Jacob

On Tue, Oct 4, 2016 at 9:55 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

great thanks a lot! will be in touch.

On Mon, Oct 3, 2016 at 6:10 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,
We thoroughly enjoyed meeting with you and I would definitely like to help when you are ready to roll out your software.

Mike

> On Oct 3, 2016, at 5:30 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

>
> Chief Botieri and Ryan,
>
> It was really nice meeting both of you last week.
>
> I think we should meet again in a month or two, to discuss more of the following and possibly try some of your data on some of the below:
>
> -facial recognition on IPAD in field
> -facial verification/recognition in building
> -emotion recognition for possible lie detection (along with hand on face analysis)
> -image search --eg phone or not in video.
>
> I also made a note to look into the hospital/retail redaction use case Chief. If you know of any place to start, please let me know.
>
> Also Chief, you seemed pretty keen on the use of facial recognition in stadiums. If you know of any place to start, please let me know.
>
> Thanks!
> Best Regards,
> Jacob

Chief,

I thought about the search for a-while this weekend, as I looked at the images from Wal-Mart, etc. and read some notes I took over past year. Skim the notes below. Few initial things and pls add the detective we met to the chain:

1. As the recent press and research articles below show, I do think that with a decent database to match from, at least 30% of the time, the facial technology should work well enough from the poor image quality. I'm wondering if you have thoughts on if this is enough to be successful? I guess I would think that would be very helpful, but obviously this means, more than half the time it may not be. You mentioned you guys would be interested weekly, some for immediate identification, some more lax (like shoplifting ones).

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3. Have you heard of any of the tools listed below? So there's nothing in MA at all at crime labs or at any agencies or nothing like JNET in Philadelphia? Boston PD itself has nothing?

4. Could we reasonably again access to MA RMV databases or other similar databases in MA? I know we discussed this at meeting and the consensus was yes. I guess I'm wondering how long would this take? No agencies around the area take advantage of it right now? Why are Illinois and Pennsylvania different? It's obviously going to have to be a combination of really good tech (which we should be there soon) and also a decent database that we can go off from.

Things to look at:

i.) **Recent Press Other Tools:**

http://www.illinoishomepage.net/news/local-news/facial-recognition-solves-crime-cases/859552732

He ran Jennifer's pictures through their arrest files which have 58,000 mug shots from Macon County. And even with a blurry image, the computer was able to match her fake surveillance picture to my pretend mug shots. He says it's as easy pie...P.I.E.

It's a lead and a starting point to build their case. When they have a decent image to go off of, German says 30% of cases are solved through this technology.

ii.) **Crime Analysis Unit**

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A couple of weeks later when they decided to pursue the case, all they had was the address where the transaction took place and the nickname Lynch had given them, "Midnight." **They sent a photo to the Sheriff's Office Crime Analysis Unit, and the unit sent back Lynch as a potential match.**

iii.) National Database + Facial Rec.

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According to Harry Giordano, Special Projects manager for JNET, successes have occurred during the JNET System Training Sessions, which are currently taking place at Computer Training Labs across the commonwealth. "Officers coming to the JNET Training Sessions are asked to bring photos of unknown suspects from open cases and, using the system for the first time during training, are getting HITS and solving crimes," said Mr. Giordano. "Thanks to DataWorks Plus' intuitive Graphical User Interface and accuracy of the core facial recognition technology even first-time users are able to get positive results."

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The camera images you sent are definitely good enough to do alerting on.

Few initial things:

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I guess I'm wondering what you consider success to be? If we found 1 real suspect a year for example, with very low false positive, would that be enough to warrant the use of it? Given there's no alerts for people now, what are your thoughts? Just if we simulate a suspect coming in, we find him the majority of times?

ii.) **Deployment Scenario:**

So you would aim to do this on all or most of the buildings you showed me in person? We would be fine on the privacy concerns for this? You mentioned at IACP you think most chiefs in MA would be on board with this. That still your thinking? I do realize the technology could be perceived as controversial, though the stark reality is that it could save lives.

iii.) **Database:**

For the watchlist database, are you thinking some combination of the below? On order of 1000 suspects? 10k suspects?

-Gov't or FBI watchlist (eg part of TSDB watchlist)

-local state most wanted

-local county wanted

-some subset of local jail booking photos

-immediate local BOLO list

-sex offender list

iv.) **Alert Statistics:**

How many people per day do you think we will profile across all 21/22 buildings? On order of 10k entering per day or how many? Some statistics are below fr this, we can fine-tune for higher numbers---the true positive may go down, but FP will go down (to 1 a week or 1 a month for example). To be clear, what makes the statistics clearly work is we err on the side of caution, i.e. we would rather not generate a match unless we're pretty sure there's a

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Do you see any value in mask detection? I would think during the winter we may run into problems. But should be good other than that.

Last, you mentioned that Tom is going to send a few pole camera videos. Is that possible? Preferably if there are people in view of course. No rush on this.

Best,

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Guys, I do plan to send a facial access management note in regards to evidence rooms over holidays; I've been thinking about it.

Have a good holiday!

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Chief, I'm going to send more material and thoughts over next few weeks.

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> **Sent:** Wednesday, November 29, 2017 12:44 PM
> **To:** Michael Botieri; Ryan Ruggiero
> **Subject:** Re: Initial Search Follow Up Note
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Jacob

Chief, can we maybe meet for a discussion sometime late next week or week after?

Best,
Jacob

On Wed, Nov 29, 2017 at 10:15 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
  Chief, I'm going to send more material and thoughts over next few weeks.

  Any initial thoughts on what I've sent thus far?

  On Sun, Nov 19, 2017 at 9:32 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

   Chief,

   The camera images you sent are definitely good enough to do alerting on.

   Few initial things:

   i.) **Success Criteria:**

   I guess I'm wondering what you consider success to be? If we found 1 real suspect a year for example, with very low false positive, would that be enough to warrant the use of it? Given there's no alerts for people now, what are your thoughts? Just if we simulate a suspect coming in, we find him the majority of times?

   ii.) **Deployment Scenario:**

   So you would aim to do this on all or most of the buildings you showed me in person? We would be fine on the privacy concerns for this? You mentioned at IACP you think most chiefs in MA would be on board with this. That still your thinking? I do realize the technology could be perceived as controversial, though the stark reality is that it could save lives.

   iii.) **Database:**

   For the watchlist database, are you thinking some combination of the below? On order of 1000 suspects? 10k suspects?

   -Gov't or FBI watchlist (eg part of TSDB watchlist)

   -local state most wanted

   -local county wanted

   -some subset of local jail booking photos

   -immediate local BOLO list

   -sex offender list

iv.) Alert Statistics:

How many people per day do you think we will profile across all 21/22 buildings? On order of 10k entering per day or how many? Some statistics are below fr this, we can fine-tune for higher numbers---the true positive may go down, but FP will go down (to 1 a week or 1 a month for example). To be clear, what makes the statistics clearly work is we err on the side of caution, i.e. we would rather not generate a match unless we're pretty sure there's a match:

-10k ppl per day

-10 percent hit rate = 1k people per day (raw detection)

-1000*100 = 100,000 match attempts (watch-list size of 100)

-0.00001*100,000 = ~1 false match per day (FAR of .001 percent)

v.) Alert Management:

I guess I'm wondering how you think about managing alerts? A subset of workers would get the alert and then they could visually confirm the match and then decide whether to take action or not on it? Is that correct? Or what are your thoughts?

vi.) Deployment Note:

As we discussed in person, it would make sense to add a slight zoom to the cameras, to focus more on when they enter the building initially. The distance we would like to be at for facial is within 10-15 yards (30-45 ft and less) for high accuracy. Do you think this is doable?

I will also aim to prepare a video showing how distance affects facial recognition in a similar deployment scenario over the holidays, with context to the images you sent.

vii.) Mask Detection:

Do you see any value in mask detection? I would think during the winter we may run into problems. But should be good other than that.

Last, you mentioned that Tom is going to send a few pole camera videos. Is that possible? Preferably if there are people in view of course. No rush on this.

Best,

Jacob

Chief, it seems right now I have pretty good flexibility next week on thurs or fri. or the week after on the same days. Do any of those work for you in morning or afternoon?

Best Regards,
Jacob

On Thu, Dec 7, 2017 at 9:26 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Jacob – send me a few dates and I will check the calendar.
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Tuesday, December 05, 2017 6:44 PM
> **To:** Michael Botieri
> **Cc:** Ryan Ruggiero
> **Subject:** Re: Initial Thoughts on Facial Alert in Real Time
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Chief, I just talked to one contact I made at IACP, who is a chief in Indiana. he said that for them, it would be a huge value to just have a log of the people coming and going from the evidence room. Right now, there's no real log (don't have someone's face logged upon entry and exit); it really just takes one bad apple to mess everything up and cause a bunch of cases to be dismissed when evidence is tampered with; they could be allowing others in upon entry as well. Apparently they're audited in someway by NCIS yearly and this would help that audit. Relatedly, it seems if people are in the agency and don't have some CJIS background check, it's of value to him to know that everyone who entered, has had this done. He also wants cameras inside the facility and outside to be running facial continually. Maybe change can come Mont! I've been thinking about giving it a push next year.

Here's a google docs with some evidence room notes:

https://docs.google.com/document/d/1t4cN21wDNkfNjkE3Di8462WxpQCR3elNwWPjFZWzkvM/edit?usp=sharing

I will add more and organize a bit more later on.

On Thu, Nov 30, 2017 at 7:36 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> Can you guys view google docs ok if I share it with your email addresses?

> On Wed, Nov 29, 2017 at 4:21 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

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>> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
>> **Sent:** Wednesday, November 29, 2017 12:44 PM
>> **To:** Michael Botieri; Ryan Ruggiero
>> **Subject:** Re: Initial Search Follow Up Note

>> Also related in news past couple days on search:

>> i.) Seems Amazon is in game. I think our service could be better still and I'm sure similar price:

>> http://www.nextgov.com/cio-briefing/2017/11/how-one-law-enforcement-agency-using-facial-recognition-identify-suspects/142816/

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Chief let's meet soon! Hope all is well.

On Tue, Dec 12, 2017 at 12:09 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> That sounds like it would be a great value for the evidence room.
>
> Mike
>
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Jacob

Chief,

Couple other things we should look at:

1.) Seems California has a popular ARJIS/TACIDS platform:

https://www.eff.org/files/2013/11/07/2008-leim-nij-day-tacids_copy.pdf

http://www.govtech.com/security/Californias-ARJIS-to-Support-Crime-Fighting.html

https://www.businesswire.com/news/home/20130508005558/en/FaceFirst%E2%84%A2-Secures-New-Business-ARJIS-Automated-Regional

https://www.eff.org/files/2013/11/07/01_-_tacids_award_letter_2.pdf

https://www.sandiego.gov/sites/default/files/legacy/comptroller/reports/pdf/arjis2002.pdf

https://www.eff.org/deeplinks/2013/11/san-diego-gets-your-face-new-mobile-identification-system

https://www.eff.org/files/2013/11/07/2008-leim-nij-day-tacids_copy.pdf

http://itlaw.wikia.com/wiki/Automated_Regional_Justice_Information_System

http://www.arjis.org/RegionalPolicies/Facial%20Recognition%20Privacy%20Impact%20Assessment%20Report.pdf

http://www.arjis.org/SitePages/ARJISAgencies.aspx

http://www.govwiki.info/pdfs/Special%20District/CA%20San%20Diego%20Association%20Of%20Governments%202016.pdf

"ƒUncooperative Persons Are Not Easily
Identified
ƒWanted And Persons Of Interest
Evade Detection
ƒOutstanding Warrants Remain
Unexecuted"

""Tucson has been using COPLINK for five years, and it's proven to be an incredibly effective investigative tool in helping put murderers, repeat sex offenders and drug traffickers behind bars," said Detective Tim Petersen of the Tucson Police Department. "We've also been able to achieve a 7:1 labor savings, which helps Tucson keep more feet on the streets."
"

""Wanted persons may not have proper identification, making the job of our law enforcement agents much more difficult," says Joe Rosenkrantz, CEO of FaceFirst. "Our technology and integration with TACIDS helps agents quickly and accurately identify wanted persons when only limited information on suspects is available and often times identifiable."

"

"The secure ARJISnet intranet integrates more than 6,000 workstations throughout the 4,265 square miles of San Diego County. There are more than 11,000 authorized users generating more than 35,000 transactions daily.
"

https://www.sandiego.gov/sites/default/files/legacy/comptroller/reports/pdf/arjis2002.pdf

ii.) Wonder if we should make a face portal like this GraffitiTracker below, but with suspects in Mass:

http://www.arjis.org/SitePages/GraffitiTracker.aspx

2. Chinese next generation police station identification:

"check out un-manned police stations: http://www.planetbiometrics.com/article-details/i/6580/desc/china-plans-unmanned-police-stations-with-face-recognition/

"Cutting-edge facial-recognition technology developed by Tencent will identify citizens within the station.
The idea is that this will eliminate the need for users to sit at stations for long periods of time, sign up for accounts, or download apps — the AI will access all pertinent information as soon as it sees the person's face.

This can then make applications for government and document services faster and more streamlined, adds the article.""

Jacob

On Tue, Dec 12, 2017 at 12:20 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Will do – Hope all is well with too.
>
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Tuesday, December 12, 2017 12:18 PM
>
>
> **To:** Michael Botieri
> **Cc:** Ryan Ruggiero
> **Subject:** Re: Initial Search Follow Up Note
>
>
>
> Chief let's meet soon! Hope all is well.
>
>
>
> On Tue, Dec 12, 2017 at 12:09 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>
> > That sounds like it would be a great value for the evidence room.
> >
> >
> >
> > Mike
> >
> >
> >
> > **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> > **Sent:** Tuesday, December 12, 2017 11:44 AM
> > **To:** Michael Botieri
> > **Cc:** Ryan Ruggiero
> >
> >
> > **Subject:** Re: Initial Search Follow Up Note
> >
> >
> >
> > Chief, I just talked to one contact I made at IACP, who is a chief in Indiana. he said that for them, it would be a huge value to just have a log of the people coming and going from the evidence room. Right now, there's no real log (don't have someone's face logged upon entry and exit); it really just takes one bad apple to mess everything up and cause a bunch of cases to be dismissed when evidence is tampered with; they could be allowing others in upon entry as well. Apparently they're audited in someway by NCIS yearly and this would help that audit. Relatedly, it seems if people are in the agency and don't have some CJIS background check, it's of value to him to know that everyone who entered, has had this done. He also wants cameras inside the facility and outside to be running facial continually. Maybe change can come Mont! I've been thinking about giving it a push next year.
> >
> >
> >
> >
> >
> > Here's a google docs with some evidence room notes:
> >
> >
> >
> > https://docs.google.com/document/d/1t4cN21wDNkfNjkE3Di8462WxpQCR3elNwWPjFZWzkvM/edit?usp=sharing
> >
> >
> >
> > I will add more and organize a bit more later on.
> >
> >
> >
> > On Thu, Nov 30, 2017 at 7:36 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> >
> > > Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 29, 2017 at 4:21 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

I'll check it out Jacob

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, November 29, 2017 12:44 PM
To: Michael Botieri; Ryan Ruggiero
Subject: Re: Initial Search Follow Up Note

Also related in news past couple days on search:

i.) Seems Amazon is in game. I think our service could be better still and I'm sure similar price:

http://www.nextgov.com/cio-briefing/2017/11/how-one-law-enforcement-agency-using-facial-recognition-identify-suspects/142816/

ii.)

http://www.11alive.com/article/news/local/is-it-mariah-fbi-asking-for-help-identifying-woman-child-in-photos/85-495407961

I did also compile a large list of notes/thoughts on facial access management for evidence rooms over holidays. Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 22, 2017 at 1:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Thanks Jacob. Have a great Thanksgiving.

On Nov 22, 2017, at 12:56 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Guys, I do plan to send a facial access management note in regards to evidence rooms over holidays; I've been thinking about it.

Have a good holiday!

Best,

Jacob

On Sun, Nov 19, 2017 at 8:12 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief,

I thought about the search for a-while this weekend, as I looked at the images from Wal-Mart, etc. and read some notes I took over past year. Skim the notes below. Few initial things and pls add the detective we met to the chain:

1. As the recent press and research articles below show, I do think that with a decent database to match from, at least 30% of the time, the facial technology should work well enough from the poor image quality. I'm wondering if you have thoughts on if this is enough to be successful? I guess I would think that would be very helpful, but obviously this means, more than half the time it may not be. You mentioned you guys would be interested weekly, some for immediate identification, some more lax (like shoplifting ones).

2. I don't think our facial engine is currently optimized for the blurry images you gave me, but we could optimize it within a few months for sure.

3. Have you heard of any of the tools listed below? So there's nothing in MA at all at crime labs or at any agencies or nothing like JNET in Philadelphia? Boston PD itself has nothing?

4. Could we reasonably again access to MA RMV databases or other similar databases in MA? I know we discussed this at meeting and the consensus was yes. I guess I'm wondering how long would this take? No agencies around the area take advantage of it right now? Why are Illinois and Pennsylvania different? It's obviously going to have to be a combination of really good tech (which we should be there soon) and also a decent database that we can go off from.

Things to look at:

i.) **Recent Press Other Tools:**

http://www.illinoishomepage.net/news/local-news/facial-recognition-solves-crime-cases/859552732

He ran Jennifer's pictures through their arrest files which have 58,000 mug shots from Macon County. And even with a blurry image, the computer was able to match her fake surveillance picture to my pretend mug shots. He says it's as easy pie...P.I.E.

It's a lead and a starting point to build their case. When they have a decent image to go off of, German says 30% of cases are solved through this technology.

ii.) **Crime Analysis Unit**

https://www.usnews.com/news/best-states/florida/articles/2017-05-28/florida-case-is-poster-child-for-facial-recognition-tech

A couple of weeks later when they decided to pursue the case, all they had was the address where the transaction took place and the nickname Lynch had given them, "Midnight." **They sent a photo to the Sheriff's Office Crime Analysis Unit, and the unit sent back Lynch as a potential match.**

iii.) **National Database + Facial Rec.**

Some of the longest-running and largest systems are found at the state and local level. The Pinellas County Sheriff's Office in Florida, for example, began implementing its current system in 2001.61 Over 5,300 officials from 242 federal, state, and local agencies have access to the system.62 In Pennsylvania, officials from over 500 agencies already use the state's face recognition system, which is open to all 1,020 law enforcement agencies in the state.63

JNET Facial Recognition System (JFRS) uses DataWorks Plus' FACE Plus product, a web-based solution that provides accurate, reliable identification, and which incorporates NEC's NeoFace™ facial recognition matching software technology to process and compare images. The system serves more than 800 contributing law enforcement and other state offices in Pennsylvania and includes more than 250 capture locations, more than 2.5 million arrest records, and 38,000 web retrieval users sharing data records and mug shot images across the state's WAN.

JFRS enables Pennsylvania's criminal justice professionals to verify or discover identity matches through one-to-one or one-to-many searches in a database sized for 3.5 million criminal booking images. So far, the JFRS identity searches have aided investigators in solving numerous cases, including homicides, robberies, burglaries, fraud and identity theft.

JFRS also includes the PA Watchlist functionality that enables users in the field to add suspect images from bank cameras, ATMs, retail security cameras and other sources to the watch list, enhancing the opportunity for additional identifications.

According to Harry Giordano, Special Projects manager for JNET, successes have occurred during the JNET System Training Sessions, which are currently taking place at Computer Training Labs across the commonwealth. "Officers coming to the JNET Training Sessions are asked to bring photos of unknown suspects from open cases and, using the system for the first time during training, are getting HITS and solving crimes," said Mr. Giordano. "Thanks to DataWorks Plus' intuitive Graphical User Interface and accuracy of the core facial recognition technology even first-time users are able to get positive results."

Over 39,000 municipal, county, state and federal justice professionals use JNET to access critical information and securely conduct investigations. JNET provides role-based access to over 35 distinct applications. In addition, JNET uses a service oriented architecture (SOA) model to broker the exchange of over 600 million messages annually between business partners. The JNET infrastructure connects all 67 Pennsylvania counties, 38 state agencies, and 37 federal law enforcement agencies.

JFRS provides a host of imaging tools that allow photographs to be cropped, rotated or manipulated to assist with comparison. Furthermore, JFRS employs two unique search algorithm technologies. Photographs submitted into JFRS by investigators are automatically analyzed by both search algorithms, ensuring that law enforcement benefits from multiple technologies. With JFRS deployed on JNET, the system can be made available to any law enforcement agency in Pennsylvania. Law enforcement professionals from more than 500 agencies have completed training and have access to JFRS.

iv.) Research Articles:

http://www.wired.co.uk/article/facial-recognition-systems-can-identify-you-even-if-your-face-is-blurred

https://www.wired.com/2016/09/machine-learning-can-identify-pixelated-faces-researchers-show/

"The researchers said only 10 fully-visible examples of a person's face were needed to identify a blurred image with 91.5 per cent accuracy. With an average of just 1.25 tagged images, the system could still correctly identify an individual 56.8 per cent of the time, which is 73 times higher than chance would allow.

It fared worse in "across event" measurements - those in which the lighting, clothing and context had changed - but still performed at 17 times the rate of chance, identifying people in 31.9 per cent of obscured images.

The researchers also tested different obfuscation methods to see if there was variance in the identification performance. By attempting to recognise non-tagged Gaussian blurs, white boxes and black box images they found that the best method for staying anonymous is to post all your pictures to Facebook with a black box over your face and shoulders. The next safest would be blocking it out with a white box, then a Gaussian blur. "

Jacob

Chief,

Do you guys have any availability next week?

I'll be gone 22-30th.

If not, aim for first or second week of Jan then?

I do really think we're onto something here. I think we can build some good stuff, if we get access to right databases and I understand your exact ideal workflow. I also think, with the right features, we can make a platform for multiple agencies to use, which should have network benefits in identifying suspects across jurisdictions.

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So you would aim to do this on all or most of the buildings you showed me in person? We would be fine on the privacy concerns for this? You mentioned at IACP you think most chiefs in MA would be on board with this. That still your thinking? I do realize the technology could be perceived as controversial, though the stark reality is that it could save lives.

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Jacob – I'm only in the office 2 days this week. Maybe next week or after the holidays.

Thanks

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Sent: Friday, December 15, 2017 7:59 AM

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> Sure – Maybe sometime on Thursday the 11th.
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
>
> 508-830-4218 X 226
>
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> On Monday, December 18, 2017, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>
> great
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Monday, December 18, 2017 8:27 AM
> **To:** Michael Botieri
> **Cc:** Ryan Ruggiero
> **Subject:** Re: Initial Thoughts on Facial Alert in Real Time
>
>
> Mike, I'm gone next week. Let's do first or second week of Jan? What works?
>
>
> On Mon, Dec 18, 2017 at 8:23 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>
> Jacob – I'm only in the office 2 days this week. Maybe next week or after the holidays.
>
>
> Thanks
>
> Mike
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Friday, December 15, 2017 7:59 AM

To: Michael Botieri
Cc: Ryan Ruggiero
Subject: Re: Initial Thoughts on Facial Alert in Real Time

Chief,

Do you guys have any availability next week?

I'll be gone 22-30th.

If not, aim for first or second week of Jan then?

I do really think we're onto something here. I think we can build some good stuff, if we get access to right databases and I understand your exact ideal workflow. I also think, with the right features, we can make a platform for multiple agencies to use, which should have network benefits in identifying suspects across jurisdictions.

Jacob

On Thu, Dec 7, 2017 at 12:49 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, it seems right now I have pretty good flexibility next week on thurs or fri. or the week after on the same days. Do any of those work for you in morning or afternoon?

Best Regards,

Jacob

On Thu, Dec 7, 2017 at 9:26 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob – send me a few dates and I will check the calendar.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, December 05, 2017 6:44 PM
To: Michael Botieri
Cc: Ryan Ruggiero
Subject: Re: Initial Thoughts on Facial Alert in Real Time

Chief, can we maybe meet for a discussion sometime late next week or week after?

Best,

Jacob

On Wed, Nov 29, 2017 at 10:15 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, I'm going to send more material and thoughts over next few weeks.

Any initial thoughts on what I've sent thus far?

On Sun, Nov 19, 2017 at 9:32 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief,

The camera images you sent are definitely good enough to do alerting on.

Few initial things:

i.) **Success Criteria:**

I guess I'm wondering what you consider success to be? If we found 1 real suspect a year for example, with very low false positive, would that be enough to warrant the use of it? Given there's no alerts for people now, what are your thoughts? Just if we simulate a suspect coming in, we find him the majority of times?

ii.) **Deployment Scenario:**

So you would aim to do this on all or most of the buildings you showed me in person? We would be fine on the privacy concerns for this? You mentioned at IACP you think most chiefs in MA would be on board with this. That still your thinking? I do realize the technology could be perceived as controversial, though the stark reality is that it could save lives.

iii.) **Database:**

For the watchlist database, are you thinking some combination of the below? On order of 1000 suspects? 10k suspects?

-Gov't or FBI watchlist (eg part of TSDB watchlist)

-local state most wanted

-local county wanted

-some subset of local jail booking photos

-immediate local BOLO list

-sex offender list

iv.) Alert Statistics:

How many people per day do you think we will profile across all 21/22 buildings? On order of 10k entering per day or how many? Some statistics are below fr this, we can fine-tune for higher numbers---the true positive may go down, but FP will go down (to 1 a week or 1 a month for example). To be clear, what makes the statistics clearly work is we err on the side of caution, i.e. we would rather not generate a match unless we're pretty sure there's a match:

-10k ppl per day

-10 percent hit rate = 1k people per day (raw detection)

-1000*100 = 100,000 match attempts (watch-list size of 100)

-0.00001*100,000 = ~1 false match per day (FAR of .001 percent)

v.) Alert Management:

I guess I'm wondering how you think about managing alerts? A subset of workers would get the alert and then they could visually confirm the match and then decide whether to take action or not on it? Is that correct? Or what are your thoughts?

vi.) Deployment Note:

As we discussed in person, it would make sense to add a slight zoom to the cameras, to focus more on when they enter the building initially. The distance we would like to be at for facial is within 10-15 yards (30-45 ft and less) for high accuracy. Do you think this is doable?

I will also aim to prepare a video showing how distance affects facial recognition in a similar deployment scenario over the holidays, with context to the images you sent.

vii.) Mask Detection:

Do you see any value in mask detection? I would think during the winter we may run into problems. But should be good other than that.

Last, you mentioned that Tom is going to send a few pole camera videos. Is that possible? Preferably if there are people in view of course. No rush on this.

Best,

Jacob

Works for me! See you guys then!

Let me know if you need an invite.

On Friday, December 29, 2017, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Let's do 2pm on Thursday the 11th
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
>
> 508-830-4218 X 226
>
> chiefbotieri@plymouthpolice.com
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Friday, December 29, 2017 2:51 PM
> **To:** Michael Botieri
> **Cc:** Ryan Ruggiero
> **Subject:** Re: Initial Thoughts on Facial Alert in Real Time
>
>
> Mike sure, does like 2pm work? Or morning ? 10am?
>
> On Friday, December 29, 2017, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>
> Sure – Maybe sometime on Thursday the 11th.
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
>
> 508-830-4218 X 226
>
> chiefbotieri@plymouthpolice.com
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Friday, December 29, 2017 12:37 PM
> **To:** Michael Botieri
> **Cc:** Ryan Ruggiero
> **Subject:** Re: Initial Thoughts on Facial Alert in Real Time
>
>
> Mike, hope holidays going well.
>
>
> I'm excited about things and have thought of additional features to discuss.
>
>
> Can we meet thurs or fri this coming week or next?
>
>
> Jacob
>
> On Monday, December 18, 2017, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

great

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On Mon, Dec 18, 2017 at 8:23 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob – I'm only in the office 2 days this week. Maybe next week or after the holidays.

Thanks

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Chief,

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I guess I'm wondering what you consider success to be? If we found 1 real suspect a year for example, with very low false positive, would that be enough to warrant the use of it? Given there's no alerts for people now, what are your thoughts? Just if we simulate a suspect coming in, we find him the majority of times?

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So you would aim to do this on all or most of the buildings you showed me in person? We would be fine on the privacy concerns for this? You mentioned at IACP you think most chiefs in MA would be on board with this. That still your thinking? I do realize the technology could be perceived as controversial, though the stark reality is that it could save lives.

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Last, you mentioned that Tom is going to send a few pole camera videos. Is that possible? Preferably if there are people in view of course. No rush on this.

Best,

Jacob

Chief,

Before next week, few quick things:

i.) I've condensed all notes into a few different google docs. Can you view google docs ok? I hope this is a better way of looking at things. Pls skim some of it if you have time before Thurs:

1. Plymouth PD Considerations:

https://docs.google.com/document/d/1-EuwJkrFA6c8sIlnDtILb7pgFeqop8rWPQWpu4CsWm8/edit?usp=sharing

2. General Search/Identification Notes:

https://docs.google.com/document/d/1mcU0WqNwFRgLKc1qfNDUXq41pLNx_o5r2AyZC-fonbM/edit?usp=sharing

3. General Alert Notes:

https://docs.google.com/document/d/1MtsCbHsXnNDNiwr23JQWzwlVuDyZVrBbjnH5gwLyLgU/edit?usp=sharing

4. General Evidence Room Notes:

https://docs.google.com/document/d/1t4cN21wDNkfNjkE3Di8462WxpQCR3elNwWPjFZWzkvM/edit?usp=sharing

5. General Real Time Identification Notes:

https://docs.google.com/document/d/1qTZAMbQJ8S_-gEafgad1EXrhoRiIatLgKGxsSGrG1yc/edit?usp=sharing

ii.) In regards to the distance discussion below, I've made a basic video and will show it in person; this is why I suggest a slight zoom:

"I will also aim to prepare a video showing how distance affects facial recognition in a similar deployment scenario over the holidays, with context to the images you sent.
"

iii.) Last, you mentioned that Tom is going to send a few pole camera videos. Is that possible? Preferably if there are people in view of course.

Best,
Jacob

Chief,

This is what alerting could like, on screen:

https://www.dropbox.com/s/n38y1jehi672d9c/FacialRec.avi?dl=0

So you can see the guy's name flashes on his face occasionally in 'red' when a match is made. This is me and a group at Boston Convention Center.

You can see it's going to work usually when face is 45 degrees or less turned. More than that and it will run into problems.

So from here, we would send the database match and the short clip to be reviewed by a dispatcher or whomever you think is relevant.

Jacob

On Fri, Jan 5, 2018 at 10:15 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> Chief,
>
> Before next week, few quick things:
>
> i.) I've condensed all notes into a few different google docs. Can you view google docs ok? I hope this is a better way of looking at things. Pls skim some of it if you have time before Thurs:
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>
>
> **2. General Search/Identification Notes:**
>
> https://docs.google.com/document/d/1mcU0WqNwFRgLKc1qfNDUXq41pLNx_o5r2AyZC-fonbM/edit?usp=sharing
>
>
> **3. General Alert Notes:**
>
> https://docs.google.com/document/d/1MtsCbHsXnNDNiwr23JQWzwlVuDyZVrBbjnH5gwLyLgU/edit?usp=sharing
>
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>
> https://docs.google.com/document/d/1t4cN21wDNkfNjkE3Di8462WxpQCR3elNwWPjFZWzkvM/edit?usp=sharing
>
>
> **5. General Real Time Identification Notes:**
>
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>
>
> ii.) In regards to the distance discussion below, I've made a basic video and will show it in person; this is why I suggest a slight zoom:
>
> "I will also aim to prepare a video showing how distance affects facial recognition in a similar deployment scenario over the holidays, with context to the images you sent.
> "
>
> iii.) Last, you mentioned that Tom is going to send a few pole camera videos. Is that possible? Preferably if there are people in view of course.

Best,
Jacob

Nancy, can you confirm my meeting with chief tmr at 2? We are on right?

On Wed, Nov 8, 2017 at 11:05 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Hi,

Yes. Thursday, November 16 at 2:00 PM here.   See you then. Thank you.

Nancy Dillon

Administrative Secretary

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 272

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, November 08, 2017 10:56 AM
To: Nancy Dillon

Cc: Michael Botieri
Subject: Re: Redacting Software

Thurs at 2 works well. Can we plan for that?

Jacob

On Wed, Nov 8, 2017 at 10:27 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Hello, Mr. Sniff,

I checked with Chief Botieri, and he is available Wednesday or Thursday, November 15 or 16 at 2:00 PM. Unfortunately his schedule is quite full, and he does not have any morning availability.

 Please let me know if you are available on either date at 2:00 PM.

Thank you.

Nancy Dillon

Administrative Secretary

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 272

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, November 08, 2017 8:50 AM

To: Michael Botieri
Cc: Nancy Dillon
Subject: Re: Redacting Software

Chief, let's just aim for next week if it works for you? fri is difficult now.

I'm open almost everything morning right now next week.

On Mon, Nov 6, 2017 at 10:07 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, Wed or Fri morning would work this week.

If not, sometime next week?

Best,

Jacob

On Mon, Nov 6, 2017 at 9:17 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob – sorry, I have been very busy. Send me a couple dates and times and I will make sure that the Dt. Lt. can show you what we have for video.

Thanks

Michael E. Botieri

Chief of Police

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Thursday, November 02, 2017 12:25 PM

To: Michael Botieri
Cc: Nancy Dillon
Subject: Re: Redacting Software

Chief, maybe next mon or tues early again to meet?

On Mon, Oct 30, 2017 at 11:56 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

I know. But I know you said you have similar ones from CVS.

I said "Originally I thought it was Plymouth, Mass. but it's a nearby plymouth in CT. Look forward to discussing similar examples.
"

On Mon, Oct 30, 2017 at 11:55 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Those are both Plymouth Conn.

Chief,

Sounds good.

Btw, have you seen this guy?

https://www.nbcconnecticut.com/news/local/Plymouth-Police-Seek-Robbery-Suspect-454001163.html

http://www.wfsb.com/story/36711665/police-search-for-suspect-in-attempted-robbery-of-a-plymouth-gas-station

Originally I thought it was Plymouth, Mass. but it's a nearby plymouth in CT. Look forward to discussing similar examples.

Jacob

On Mon, Oct 30, 2017 at 8:11 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,

I'll check the schedule to meet later this week.

Thanks

On Oct 30, 2017, at 7:25 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief should we just reschedule? You around later today? It's a longer commute for me, so just want to be sure. I actually don't have power at my house.

On Mon, Oct 30, 2017 at 7:00 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, we still good to meet this morning at 8:30? Wasn't sure if you were tied up with storm or not. I'm planning to leave in 15 minutes or so. Let me know if you get this.

On Wed, Oct 25, 2017 at 11:52 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Yes that works. I want to see a few things---hope that's ok. Your CVS footage, the buildings we discussed, etc. Only need to see a few examples of each.

On Wed, Oct 25, 2017 at 11:38 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob – can we change the time to 8:30am?

Sent: Wednesday, October 25, 2017 10:24 AM

To: Michael Botieri
Subject: Re: Redacting Software

Yes that works. Mon 10/30 at 9 it is!

On Wed, Oct 25, 2017 at 10:22 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,

I can meet Monday morning – does 9am work for you?

Mike

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, October 25, 2017 10:12 AM

To: Michael Botieri
Subject: Re: Redacting Software

Chief, it was nice meeting you. Does sometime on M or Fri. next week work to meet briefly? If not, how about following week M-W, or F?

Best,

Jacob

On Fri, Oct 6, 2017 at 12:24 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

likewise!

On Fri, Oct 6, 2017 at 12:18 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

I look forward to seeing you Jacob.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, October 06, 2017 11:11 AM
To: Michael Botieri
Subject: Re: Redacting Software

Mike,

Hope all is well.

Check out our person of interest deployment, Mavs locker room this past weekend. See you at IACP!

https://www.mavsmoneyball.com/2017/9/30/16390764/dallas-mavericks-new-locker-room-is-sleek-and-modern

https://www.usatoday.com/story/sports/ftw/2017/09/30/mark-cuban-introduces-mavs-new-facial-recognition-software/106172740/

http://www.star-telegram.com/sports/nba/dallas-mavericks/article176383961.html

https://twitter.com/TexasMetroNews/status/914223368001474568

Jacob

On Fri, Sep 30, 2016 at 10:57 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

You will

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA   02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, September 30, 2016 8:25 AM
To: Marlene Cavanaugh
Cc: Michael Botieri
Subject: Re: Redacting Software

see you later at 2pm est today.

On Tue, Sep 27, 2016 at 10:25 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

great thank you!

On Tue, Sep 27, 2016 at 10:23 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Good morning.

Yes, to all. We can accommodate all of your needs.

See you on Friday.

Marlene

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

Plymouth, MA   02360

508-830-4218 X 213

cavanaugh@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, September 27, 2016 9:55 AM

To: Marlene Cavanaugh
Subject: Re: Redacting Software

Marlene,

Couple quick questions:

i.) I have a macbook. Was hoping to give a presentation by projector. Do you guys have a projector and hdmi cable?

ii.) Can we connect easily to internet? I have a small youtube demo I wanted to show.

Thanks!

Best,
Jacob

On Tue, Sep 13, 2016 at 10:09 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Great.

See you then.

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 213

cavanaugh@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, September 13, 2016 10:06 AM

To: Marlene Cavanaugh
Subject: Re: Redacting Software

yes that works.

On Tue, Sep 13, 2016 at 9:16 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

How about we do the 30th at 2:00pm here at the station?

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 213

cavanaugh@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Monday, September 12, 2016 5:47 PM
To: Marlene Cavanaugh
Subject: Re: Redacting Software

You guys are like an hr or so away from me. Assuming you want to meet in Plymouth, how about meeting on 28th or 30th early afternoon?

Best Regards,
Jacob

On Mon, Sep 12, 2016 at 5:37 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Chief prefers a meeting in person.

See you tomorrow at 2:00?

On Sep 12, 2016, at 5:04 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

> One hour at most is sufficient. Does he want to meet in person or on phone? If on phone, I suggest using skype or similar, so I can screen-share the technology.

> On Mon, Sep 12, 2016 at 5:01 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Not sure of what the meeting entails. How much time do you need allotted?

On Sep 12, 2016, at 4:40 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

> Hi Marlene,

> 2pm should work fine tmr. Do you want to set-up a conference?

> Thanks!
> Jacob

> On Mon, Sep 12, 2016 at 4:29 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Hi.

I was just checking with Chief Botieri. Looks like he has between 2-4:00 tomorrow, or next Thursday after 2:00.

I know you mentioned Wed and/or Fri, but it looks like we would have to wait a couple of weeks if that is the case (the 28th or 30th).

Let me know your thoughts.

Thanks,

Marlene

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 213

cavanaugh@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Monday, September 12, 2016 4:00 PM
To: Marlene Cavanaugh
Cc: harry.scott@hpe.com; Michael Botieri
Subject: Re: Redacting Software

Sorry Mike, my phone has had better days. Trying to get a new one this week. This email is super reliable though. Yes, Marlene, when works to chat? Maybe sometime Wed or Fri afternoon est?

Thanks!

On Mon, Sep 12, 2016 at 3:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,

I received your information from my good friend Harry Scott. I would like to set up a time to meet regarding you new technology. I tried your cell – however – I was not able to leave a message. Please contact my Administrative Assistant (Marlene Cavanaugh), at (508) 830-4218 ext. 226 or feel free to contact me through this email and I will pass along to her for scheduling.

Thanks

Mike

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

grt!

On Wed, Jan 10, 2018 at 8:45 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

> Good morning, Jacob,
>
> We are confirmed for tomorrow at 2:00 PM.   See you then.
>
> Thanks.
>
> Nancy Dillon
>
> Administrative Secretary
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
>
> 508-830-4218 X 272
>
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> **Sent:** Wednesday, January 10, 2018 8:16 AM
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> Yes. Thursday, November 16 at 2:00 PM here.   See you then. Thank you.
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> Nancy Dillon
>
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>
> Plymouth Police Department
>
> 20 Long Pond Road
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> Plymouth, MA 02360
>
> 508-830-4218 X 272
>
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> **To:** Nancy Dillon

Cc: Michael Botieri
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Thurs at 2 works well. Can we plan for that?

Jacob

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Hello, Mr. Sniff,

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 Please let me know if you are available on either date at 2:00 PM.

Thank you.

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Best,

Jacob

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Jacob – sorry, I have been very busy. Send me a couple dates and times and I will make sure that the Dt. Lt. can show you what we have for video.

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Chief,

Sounds good.

Btw, have you seen this guy?

https://www.nbcconnecticut.com/news/local/Plymouth-Police-Seek-Robbery-Suspect-454001163.html

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> **Subject:** Re: Redacting Software
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> Chief, it was nice meeting you. Does sometime on M or Fri. next week work to meet briefly? If not, how about following week M-W, or F?
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> Best,

Jacob

On Fri, Oct 6, 2017 at 12:24 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

likewise!

On Fri, Oct 6, 2017 at 12:18 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

I look forward to seeing you Jacob.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, October 06, 2017 11:11 AM
To: Michael Botieri
Subject: Re: Redacting Software

Mike,

Hope all is well.

Check out our person of interest deployment, Mavs locker room this past weekend. See you at IACP!

https://www.mavsmoneyball.com/2017/9/30/16390764/dallas-mavericks-new-locker-room-is-sleek-and-modern

https://www.usatoday.com/story/sports/ftw/2017/09/30/mark-cuban-introduces-mavs-new-facial-recognition-software/106172740/

http://www.star-telegram.com/sports/nba/dallas-mavericks/article176383961.html

https://twitter.com/TexasMetroNews/status/914223368001474568

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On Fri, Sep 30, 2016 at 10:57 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

You will

Chief Michael E. Botieri

Plymouth Police Department

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chiefbotieri@plymouthpolice.com

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Sent: Friday, September 30, 2016 8:25 AM
To: Marlene Cavanaugh
Cc: Michael Botieri
Subject: Re: Redacting Software

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great thank you!

On Tue, Sep 27, 2016 at 10:23 AM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Good morning.

Yes, to all. We can accommodate all of your needs.

See you on Friday.

Marlene

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

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Marlene,

Couple quick questions:

i.) I have a macbook. Was hoping to give a presentation by projector. Do you guys have a projector and hdmi cable?

ii.) Can we connect easily to internet? I have a small youtube demo I wanted to show.

Thanks!

Best,
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How about we do the 30th at 2:00pm here at the station?

Marlene Cavanaugh

Plymouth Police Department

20 Long Pond Road

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508-830-4218 X 213

cavanaugh@plymouthpolice.com

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Best Regards,
Jacob

On Mon, Sep 12, 2016 at 5:37 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

Chief prefers a meeting in person.

See you tomorrow at 2:00?

On Sep 12, 2016, at 5:04 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

> One hour at most is sufficient. Does he want to meet in person or on phone? If on phone, I suggest using skype or similar, so I can screen-share the technology.

> On Mon, Sep 12, 2016 at 5:01 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

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>> Hi Marlene,

>> 2pm should work fine tmr. Do you want to set-up a conference?

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>> On Mon, Sep 12, 2016 at 4:29 PM, Marlene Cavanaugh <cavanaugh@plymouthpolice.com> wrote:

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Let me know your thoughts.

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Jacob,

I received your information from my good friend Harry Scott. I would like to set up a time to meet regarding you new technology. I tried your cell – however – I was not able to leave a message. Please contact my Administrative Assistant (Marlene Cavanaugh), at (508) 830-4218 ext. 226 or feel free to contact me through this email and I will pass along to her for scheduling.

Thanks

Mike

Chief Michael E. Botieri

Plymouth Police Department

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Nancy, can you guys access google docs ok over there? I just wanted to check that there were no restrictions.

On Wed, Jan 10, 2018 at 8:54 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

grt!

On Wed, Jan 10, 2018 at 8:45 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Good morning, Jacob,

We are confirmed for tomorrow at 2:00 PM.   See you then.

Thanks.

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Yes see you the 18th!

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Administrative Secretary

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 272

Nancy? I'm good to meet tmr at 2?

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Sent: Thursday, January 11, 2018 9:06 AM
To: Nancy Dillon
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: RESCHEDULE TODAY'S MEETING

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Subject **Re: RESCHEDULE TODAY'S MEETING**
To   Ryan Ruggiero <Ruggiero@plymouthpolice.com>, Antonio Gomes <ltgomes@plymouthpolice.com>
Date   Thu, 18 Jan 2018 17:34:05 -0500

Tony/Ryan, nice meeting.

Forgot to mention I had dug this up:

http://www.tauntongazette.com/x273440750/Mass-Most-Wanted-Shoplifting-in-Plymouth-Walmart

Best,
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Subject **Re: Condensed Notes**

To Michael Botieri <chiefbotieri@plymouthpolice.com>, Ryan Ruggiero <Ruggiero@plymouthpolice.com>

Date Thu, 25 Jan 2018 22:15:26 -0500

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Ryan, did you guys look at all into the lobby camera access?

Jacob

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Tony/Ryan, nice meeting.

Forgot to mention I had dug this up:

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Mike, yes that doesn't surprise me. You said you still wanted your own though right?

The article I had sent is below:

https://www.bostonglobe.com/metro/2016/12/20/state-scans-mass-driver-license-photos-find-matches-with-suspects/xyVIxWkPL95hQbx4sUI2WM/story.html#comments

In 2015, law enforcement agencies submitted 258 requests to scan the state's trove of RMV photos — or the equivalent of about one request per weekday.

Of that total, 102 requests were from local law enforcement agencies, 84 from state law enforcement officials, and 72 from federal agencies. (The Transportation Department said it did not have a list of the names of the agencies that submitted the requests.)

In their requests, the agencies submitted a total of 331 images, which turned up 101 potential matches.

The Massachusetts Sheriffs' Association, an independent state agency, works with all 14 sheriff departments in Massachusetts and won a Department of Justice grant that has already provided 10 sheriffs departments with the technology to create facial recognition databases.

Sean G. Mullin, chief executive of BI2 Technologies, previously worked on a biometric identification system used for tracking missing children and senior citizens with Alzheimer's disease.

On Tue, Jan 30, 2018 at 11:41 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Jacob – we have been in contact with the registry and the Fusion Center – it seems that they already have some kind of facial recognition software – we are waiting to check it out. We will keep you in the loop.
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Ryan, did you guys look at all into the lobby camera access?

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Tony/Ryan, nice meeting.

Forgot to mention I had dug this up:

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Best,
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Thx!

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Good morning,

Yes. 2:00 today.

Thank you.

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Sent: Thursday, January 18, 2018 9:18 AM
To: Nancy Dillon
Cc: Ryan Ruggiero; Antonio Gomes
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Nancy Dillon

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Chief, on the school shooting,

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Ryan you get any feedback on this? What VMS is there? Do you know? I think we'd just integrate with the VMS right? That is most important part.

On Tue, Feb 6, 2018 at 3:05 PM, Ryan Ruggiero <Ruggiero@plymouthpolice.com> wrote:

> Waiting to hear back on the best way to do this.
>
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> **To:** Ryan Ruggiero <Ruggiero@plymouthpolice.com>
> **Cc:** Antonio Gomes <ltgomes@plymouthpolice.com>
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> **Subject:** Re: RESCHEDULE TODAY'S MEETING
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Chief, sounds good.

So was there any conclusion on the below? You guys still want your own solution or what?

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Jacob – we have been in contact with the registry and the Fusion Center – it seems that they already have some kind of facial recognition software – we are waiting to check it out. We will keep you in the loop.
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>
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>
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20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, January 26, 2018 3:33 AM
To: Michael Botieri
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: Condensed Notes

will do!

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Ryan some good press today! https://www.americaninno.com/boston/boston-startup/mark-cuban-backed-startup-uses-a-i-to-redact-faces-in-police-videos/

Maybe meet again week after next? You guys around? I just messaged Chief as well.

On Fri, Feb 16, 2018 at 11:43 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> Ryan you get any feedback on this? What VMS is there? Do you know? I think we'd just integrate with the VMS right? That is most important part.
>
> On Tue, Feb 6, 2018 at 3:05 PM, Ryan Ruggiero <Ruggiero@plymouthpolice.com> wrote:
>> Waiting to hear back on the best way to do this.
>>
>>
>> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
>> **Sent:** Monday, February 05, 2018 8:53 PM
>> **To:** Ryan Ruggiero <Ruggiero@plymouthpolice.com>
>> **Cc:** Antonio Gomes <ltgomes@plymouthpolice.com>
>>
>> **Subject:** Re: RESCHEDULE TODAY'S MEETING
>>
>> Ryan?
>>
>> On Tue, Jan 30, 2018 at 8:31 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>> Ryan, did you guys look at all into the lobby camera access?
>>>
>>>
>>>
>>> Jacob
>>>
>>> On Thu, Jan 18, 2018 at 5:34 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>>> Tony/Ryan, nice meeting.
>>>>
>>>> Forgot to mention I had dug this up:
>>>>
>>>> http://www.tauntongazette.com/x273440750/Mass-Most-Wanted-Shoplifting-in-Plymouth-Walmart
>>>>
>>>> Best,
>>>>
>>>> Jacob
>>>>
>>>> On Thu, Jan 18, 2018 at 9:33 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>>>> Thx!
>>>>>
>>>>> On Thursday, January 18, 2018, Nancy Dillon <dillon@plymouthpolice.com> wrote:
>>>>>> Good morning,
>>>>>>
>>>>>> Yes. 2:00 today.

Thank you.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Thursday, January 18, 2018 9:18 AM
To: Nancy Dillon
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: RESCHEDULE TODAY'S MEETING

Nancy we good to meet today at 2? I could also come by earlier like 1 or 1:30, if others can make it.

On Thu, Jan 11, 2018 at 9:09 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Yes see you the 18th!

On Thu, Jan 11, 2018 at 9:08 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Yes, no restrictions.   We will see you Thursday, January 11, 2018 @ 2:00 PM.

Thanks.

Nancy Dillon

Administrative Secretary

Plymouth Police Department

20 Long Pond Road

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508-830-4218 X 272

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Yes that works.

Can you guys view google docs ok?

On Thu, Jan 11, 2018 at 9:05 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Good Morning, Jacob,

Unfortunately, we will need to cancel and reschedule today's 2:00 appointment.   Chief Botieri will not be available.   Can you do next Thursday, January 18, 2018 at 2:00 PM?

Thank you.

Nancy Dillon

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You guys around week after? Tuesday or Fri for example?

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> Wow – great article. Let's try to meet next week.
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> 508-830-4218 X 226
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The article I had sent is below:

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We may have something rly scalable here! I guess what I'm thinking of launching now to start is the following:

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Ryan any update on lobby camera access? Hope all is well!

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On Fri, Feb 16, 2018 at 11:43 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
Ryan you get any feedback on this? What VMS is there? Do you know? I think we'd just integrate with the VMS right? That is most important part.

On Tue, Feb 6, 2018 at 3:05 PM, Ryan Ruggiero <Ruggiero@plymouthpolice.com> wrote:

Waiting to hear back on the best way to do this.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Monday, February 05, 2018 8:53 PM
To: Ryan Ruggiero <Ruggiero@plymouthpolice.com>
Cc: Antonio Gomes <ltgomes@plymouthpolice.com>

Subject: Re: RESCHEDULE TODAY'S MEETING

Ryan?

On Tue, Jan 30, 2018 at 8:31 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Ryan, did you guys look at all into the lobby camera access?

Jacob

On Thu, Jan 18, 2018 at 5:34 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Tony/Ryan, nice meeting.

Forgot to mention I had dug this up:

http://www.tauntongazette.com/x273440750/Mass-Most-Wanted-Shoplifting-in-Plymouth-Walmart

Best,
Jacob

On Thu, Jan 18, 2018 at 9:33 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Thx!

On Thursday, January 18, 2018, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Good morning,

Yes. 2:00 today.

Thank you.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Thursday, January 18, 2018 9:18 AM
To: Nancy Dillon
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: RESCHEDULE TODAY'S MEETING

Nancy we good to meet today at 2? I could also come by earlier like 1 or 1:30, if others can make it.

On Thu, Jan 11, 2018 at 9:09 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Yes see you the 18th!

On Thu, Jan 11, 2018 at 9:08 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Yes, no restrictions.   We will see you Thursday, January 11, 2018 @ 2:00 PM.

Thanks.

Nancy Dillon

Administrative Secretary

Plymouth Police Department

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508-830-4218 X 272

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To: Nancy Dillon
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Subject: Re: RESCHEDULE TODAY'S MEETING

Yes that works.

Can you guys view google docs ok?

On Thu, Jan 11, 2018 at 9:05 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Good Morning, Jacob,

Unfortunately, we will need to cancel and reschedule today's 2:00 appointment.   Chief Botieri will not be available.   Can you do next Thursday, January 18, 2018 at 2:00 PM?

Thank you.

Nancy Dillon

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Chief, the leading biometric news provider on web just picked us up organically:

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Sent: Friday, January 19, 2018 1:08 AM
To: Michael Botieri; Ryan Ruggiero; Antonio Gomes
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In 2015, law enforcement agencies submitted 258 requests to scan the state's trove of RMV photos — or the equivalent of about one request per weekday.

Of that total, 102 requests were from local law enforcement agencies, 84 from state law enforcement officials, and 72 from federal agencies. (The Transportation Department said it did not have a list of the names of the agencies that submitted the requests.)

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The Massachusetts Sheriffs' Association, an independent state agency, works with all 14 sheriff departments in Massachusetts and won a Department of Justice grant that has already provided 10 sheriffs departments with the technology to create facial recognition databases.

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From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Monday, February 12, 2018 7:11 AM

To: Michael Botieri
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: Condensed Notes

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iii.) Last, you mentioned that Tom is going to send a few pole camera videos. Is that possible? Preferably if there are people in view of course.

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Chief, check this out in news:

https://outline.com/dyWVd9

When police found a senior citizen apparently suffering from Alzheimer's missing from her family on Staten Island in 2014, officials took to technology.

They sent a photograph of the woman to an NYPD unit. A detective ran the image against a database of "several million" mug shots and was surprised to find the woman among the hundreds the software returned as possible matches.

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Chief, let's discuss next week?

On Thu, Mar 8, 2018 at 11:16 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Wow that's great – have I invested yet?

Mike

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To: Michael Botieri
Subject: Re: Condensed Notes

Chief, the leading biometric news provider on web just picked us up organically:

http://www.biometricupdate.com/201802/face-redaction-startup-suspect-technologies-plans-to-enter-facial-recognition-market

Can we meet next week? I messaged Ryan for an update on VMS as well.

On Wed, Feb 28, 2018 at 8:48 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, how does next week look ? Or week after?

On Friday, February 23, 2018, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

'll check it out.

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Chief, I'm in DC and NYC all next week. :(

You guys around week after? Tuesday or Fri for example?

On Fri, Feb 23, 2018 at 3:17 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Wow – great article. Let's try to meet next week.

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Got some good press today Chief! https://www.americaninno.com/boston/boston-startup/mark-cuban-backed-startup-uses-a-i-to-redact-faces-in-police-videos/

Maybe meet again week after next? You guys around?

On Fri, Feb 16, 2018 at 4:08 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Ok sounds good Chief!

On Fri, Feb 16, 2018 at 3:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

We do – just waiting for permission from the RMV to use there database.

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Chief, sounds good.

So was there any conclusion on the below? You guys still want your own solution or what?

"

Jacob – we have been in contact with the registry and the Fusion Center – it seems that they already have some kind of facial recognition software – we are waiting to check it out. We will keep you in the loop.

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On Fri, Feb 16, 2018 at 3:13 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Good point Jacob – still waiting for clearance from the RMV.

Mike

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Chief, on the school shooting,

i.) Don't you see how facial alerts could be pretty valuable at main entrances?

ii.) On the search, the person was blending in below. Don't you see value in this? If you could live-stream back to the PD and

someone could search for where the suspect went, it would be useful. Apparently the suspect was lost in the crowd---how scary!

http://abc13.com/watch-live-at-least-20-injured-in-florida-high-school-shooting/3084112/

"Broward County Sheriff Scott Israel said suspect Nikolas Cruz, 19, was taken into custody after he slipped out of Stoneman Douglas High School as chaos ensued.

Israel said **despite blending in with students who** were trying to escape the Parkland school, Cruz was eventually taken into custody without incident off campus.

A new photo shows Cruz being handcuffed by police in Coral Springs.

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On Mon, Feb 12, 2018 at 8:07 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

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Subject: Re: Condensed Notes

Chief, the leading biometric news provider on web just picked us up organically:

http://www.biometricupdate.com/201802/face-redaction-startup-suspect-technologies-plans-to-enter-facial-recognition-market

Can we meet next week? I messaged Ryan for an update on VMS as well.

On Wed, Feb 28, 2018 at 8:48 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, how does next week look ? Or week after?

On Friday, February 23, 2018, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

'll check it out.

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, February 23, 2018 3:24 PM
To: Michael Botieri
Subject: Re: Condensed Notes

Chief, I'm in DC and NYC all next week. :(

You guys around week after? Tuesday or Fri for example?

On Fri, Feb 23, 2018 at 3:17 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Wow – great article. Let's try to meet next week.

Chief Michael E. Botieri

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chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, February 23, 2018 2:47 PM

To: Michael Botieri
Subject: Re: Condensed Notes

Got some good press today Chief! https://www.americaninno.com/boston/boston-startup/mark-cuban-backed-startup-uses-a-i-to-redact-faces-in-police-videos/

Maybe meet again week after next? You guys around?

On Fri, Feb 16, 2018 at 4:08 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Ok sounds good Chief!

On Fri, Feb 16, 2018 at 3:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

We do – just waiting for permission from the RMV to use there database.

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From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, February 16, 2018 3:54 PM
To: Michael Botieri
Subject: Re: Condensed Notes

Chief, sounds good.

So was there any conclusion on the below? You guys still want your own solution or what?

"

Jacob – we have been in contact with the registry and the Fusion Center – it seems that they already have some kind of facial recognition software – we are waiting to check it out. We will keep you in the loop.

"

On Fri, Feb 16, 2018 at 3:13 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Good point Jacob – still waiting for clearance from the RMV.

Mike

Chief Michael E. Botieri

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chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, February 16, 2018 11:00 AM

To: Michael Botieri
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: Condensed Notes

Chief, on the school shooting,

i.) Don't you see how facial alerts could be pretty valuable at main entrances?

ii.) On the search, the person was blending in below. Don't you see value in this? If you could live-stream back to the PD and someone could search for where the suspect went, it would be useful. Apparently the suspect was lost in the crowd---how scary!

http://abc13.com/watch-live-at-least-20-injured-in-florida-high-school-shooting/3084112/

"Broward County Sheriff Scott Israel said suspect Nikolas Cruz, 19, was taken into custody after he slipped out of Stoneman Douglas High School as chaos ensued.

Israel said **despite blending in with students who** were trying to escape the Parkland school, Cruz was eventually taken into custody without incident off campus.

A new photo shows Cruz being handcuffed by police in Coral Springs.

"

On Mon, Feb 12, 2018 at 8:07 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

I'll check today.

Chief Michael E. Botieri

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chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Monday, February 12, 2018 7:11 AM

To: Michael Botieri
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: Condensed Notes

Chief, where you at with things?

On Tue, Jan 30, 2018 at 8:28 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Mike, yes that doesn't surprise me. You said you still wanted your own though right?

The article I had sent is below:

https://www.bostonglobe.com/metro/2016/12/20/state-scans-mass-driver-license-photos-find-matches-with-suspects/xyVIxWkPL95hQbx4sUI2WM/story.html#comments

In 2015, law enforcement agencies submitted 258 requests to scan the state's trove of RMV photos — or the equivalent of about one request per weekday.

Of that total, 102 requests were from local law enforcement agencies, 84 from state law enforcement officials, and 72 from federal agencies. (The Transportation Department said it did not have a list of the names of the agencies that submitted the requests.)

In their requests, the agencies submitted a total of 331 images, which turned up 101 potential matches.

The Massachusetts Sheriffs' Association, an independent state agency, works with all 14 sheriff departments in Massachusetts and won a Department of Justice grant that has already provided 10 sheriffs departments with the technology to create facial recognition databases.

Sean G. Mullin, chief executive of BI2 Technologies, previously worked on a biometric identification system used for tracking missing children and senior citizens with Alzheimer's disease.

On Tue, Jan 30, 2018 at 11:41 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob – we have been in contact with the registry and the Fusion Center – it seems that they already have some kind of facial recognition software – we are waiting to check it out. We will keep you in the loop.

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From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, January 26, 2018 3:33 AM
To: Michael Botieri
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: Condensed Notes

will do!

On Thu, Jan 25, 2018 at 10:46 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

We should have the info soon. Say hello to Cuban for me

On Jan 25, 2018, at 10:17 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, you guys making progress over there? How are things going?

I just emailed Cuban now; going to mention your request after his response.

On Fri, Jan 19, 2018 at 10:47 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Thanks Jacob – great working with you yesterday – Have Mark Cubin give me a call!!!

Mike

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, January 19, 2018 1:08 AM
To: Michael Botieri; Ryan Ruggiero; Antonio Gomes
Subject: Re: Condensed Notes

Chief/Ryan/Tony,

Thank you for your time.

We may have something rly scalable here! I guess what I'm thinking of launching now to start is the following:

Real-Time and Historical Video Review Platform for Law Enforcement

Real-Time Features:

-Facial Recognition Alert to be used across lobby cameras and a set of town cameras continually

-Real Time Person Detection - show where all people are (to be used in active shooter situation, or the events you monitor, abduction cases, etc.)

Historical Features:

-Facial Identification Matching (run any photo against a database and see if a match)

-Person Detection Review - show where all people have been in past X minutes (to be used in active shooter situation, or the events you monitor, abduction cases, etc.)

-Image Attribute Software (search people by age, gender, ethnicity, etc.)

Other Features:

-Video Conversion Software to view any file type

-Redaction

Next Steps:

1. As for the proof of concept and the launching point, we agree to run facial recognition in the lobby cameras and running facial search on the dozens of photos you get a week is a good starting point. That would give us one historical and one real-time feature, both of which are main features of the platform.

2. You guys will get us access to state RMV photos and look into lobby camera access. We meet again w/in 2 weeks.

Best,

Jacob

On Mon, Jan 8, 2018 at 8:28 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief,

This is what alerting could like, on screen:

https://www.dropbox.com/s/n38y1jehi672d9c/FacialRec.avi?dl=0

So you can see the guy's name flashes on his face occasionally in 'red' when a match is made. This is me and a group at Boston Convention Center.

You can see it's going to work usually when face is 45 degrees or less turned. More than that and it will run into problems.

So from here, we would send the database match and the short clip to be reviewed by a dispatcher or whomever you think is relevant.

Jacob

On Fri, Jan 5, 2018 at 10:15 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief,

Before next week, few quick things:

i.) I've condensed all notes into a few different google docs. Can you view google docs ok? I hope this is a better way of looking at things. Pls skim some of it if you have time before Thurs:

1. Plymouth PD Considerations:

https://docs.google.com/document/d/1-EuwJkrFA6c8sIlnDtILb7pgFeqop8rWPQWpu4CsWm8/edit?usp=sharing

2. General Search/Identification Notes:

https://docs.google.com/document/d/1mcU0WqNwFRgLKc1qfNDUXq41pLNx_o5r2AyZC-fonbM/edit?usp=sharing

3. General Alert Notes:

https://docs.google.com/document/d/1MtsCbHsXnNDNiwr23JQWzwlVuDyZVrBbjnH5gwLyLgU/edit?usp=sharing

4. General Evidence Room Notes:

https://docs.google.com/document/d/1t4cN21wDNkfNjkE3Di8462WxpQCR3elNwWPjFZWzkvM/edit?usp=sharing

5. General Real Time Identification Notes:

https://docs.google.com/document/d/1qTZAMbQJ8S_-gEafgad1EXrhoRiIatLgKGxsSGrG1yc/edit?usp=sharing

ii.) In regards to the distance discussion below, I've made a basic video and will show it in person; this is why I suggest a slight zoom:

"I will also aim to prepare a video showing how distance affects facial recognition in a similar deployment scenario over the holidays, with context to the images you sent.
"

iii.) Last, you mentioned that Tom is going to send a few pole camera videos. Is that possible? Preferably if there are people in view of course.

Best,

Jacob

Chief, check this out. Do you think your department could collaborate on below cases? Would it make sense for a hospital to call you ever?

https://americansecuritytoday.com/nypd-wants-licenses-facial-recognition-learn-multi-video/

"Besides the obvious benefit of identifying suspects in active investigations, this could:

Assist lost dementia patients.

- Such a system could identify lost adults with cognitive disorders like Alzheimer's, who might not know who they are or where they came from.
- One example: *Wall Street Journal* points out that this would have been useful in the case of a Staten Island woman with Alzheimer's who police found in 2014, and who could only be identified thanks to a minor traffic violation.

Identify the unidentified in hospitals.

- Facial recognition could help hospitals put names to unconscious patients who come in without ID, as well as John/Jane Doe cases.
- Connecting these individuals with their families could save them a lot of agony in wondering what happened/is happening to loved ones.

On Tue, Dec 12, 2017 at 12:20 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Will do – Hope all is well with too.
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Tuesday, December 12, 2017 12:18 PM
>
> **To:** Michael Botieri
> **Cc:** Ryan Ruggiero
> **Subject:** Re: Initial Search Follow Up Note
>
> Chief let's meet soon! Hope all is well.
>
> On Tue, Dec 12, 2017 at 12:09 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>
>> That sounds like it would be a great value for the evidence room.
>>
>>
>> Mike
>>
>>
>> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
>> **Sent:** Tuesday, December 12, 2017 11:44 AM
>> **To:** Michael Botieri
>> **Cc:** Ryan Ruggiero
>>
>> **Subject:** Re: Initial Search Follow Up Note
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>> Chief, I just talked to one contact I made at IACP, who is a chief in Indiana. he said that for them, it would be a huge value to just have a log of the people coming and going from the evidence room. Right now, there's no real log (don't have someone's face logged upon entry and exit); it really just takes one bad apple to mess everything up and cause a bunch of cases to be dismissed when evidence is tampered with; they could be allowing others in upon entry as well. Apparently they're audited in someway by NCIS yearly and this would help that audit. Relatedly, it seems if people are in the agency and don't have some CJIS background check, it's of value to him to know that everyone who entered, has had this done. He also wants cameras inside the facility and outside to be running facial continually. Maybe change can come Mont! I've been thinking about giving it a push next year.

Here's a google docs with some evidence room notes:

https://docs.google.com/document/d/1t4cN21wDNkfNjkE3Di8462WxpQCR3elNwWPjFZWzkvM/edit?usp=sharing

I will add more and organize a bit more later on.

On Thu, Nov 30, 2017 at 7:36 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 29, 2017 at 4:21 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

I'll check it out Jacob

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, November 29, 2017 12:44 PM
To: Michael Botieri; Ryan Ruggiero
Subject: Re: Initial Search Follow Up Note

Also related in news past couple days on search:

i.) Seems Amazon is in game. I think our service could be better still and I'm sure similar price:

http://www.nextgov.com/cio-briefing/2017/11/how-one-law-enforcement-agency-using-facial-recognition-identify-suspects/142816/

ii.)
http://www.11alive.com/article/news/local/is-it-mariah-fbi-asking-for-help-identifying-woman-child-in-photos/85-495407961

I did also compile a large list of notes/thoughts on facial access management for evidence rooms over holidays. Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 22, 2017 at 1:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Thanks Jacob. Have a great Thanksgiving.

On Nov 22, 2017, at 12:56 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Guys, I do plan to send a facial access management note in regards to evidence rooms over holidays; I've been thinking about it.

Have a good holiday!

Best,

Jacob

On Sun, Nov 19, 2017 at 8:12 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief,

I thought about the search for a-while this weekend, as I looked at the images from Wal-Mart, etc. and read some notes I took over past year. Skim the notes below. Few initial things and pls add the detective we met to the chain:

1. As the recent press and research articles below show, I do think that with a decent database to match from, at least 30% of the time, the facial technology should work well enough from the poor image quality. I'm wondering if you have thoughts on if this is enough to be successful? I guess I would think that would be very helpful, but obviously this means, more than half the time it may not be. You mentioned you guys would be interested weekly, some for immediate identification, some more lax (like shoplifting ones).

2. I don't think our facial engine is currently optimized for the blurry images you gave me, but we could optimize it within a few months for sure.

3. Have you heard of any of the tools listed below? So there's nothing in MA at all at crime labs or at any agencies or nothing like JNET in Philadelphia? Boston PD itself has nothing?

4. Could we reasonably again access to MA RMV databases or other similar databases in MA? I know we discussed this at meeting and the consensus was yes. I guess I'm wondering how long would this take? No agencies around the area take advantage of it right now? Why are Illinois and Pennsylvania different? It's obviously going to have to be a combination of really good tech (which we should be there soon) and also a decent database that we can go off from.

Things to look at:

i.) **Recent Press Other Tools:**

http://www.illinoishomepage.net/news/local-news/facial-recognition-solves-crime-cases/859552732

He ran Jennifer's pictures through their arrest files which have 58,000 mug shots from Macon County. And even with a blurry image, the computer was able to match her fake surveillance picture to my pretend mug shots. He says it's as easy pie...P.I.E.

It's a lead and a starting point to build their case. When they have a decent image to go off of, German says 30% of cases are solved through this technology.

ii.) **Crime Analysis Unit**

https://www.usnews.com/news/best-states/florida/articles/2017-05-28/florida-case-is-poster-child-for-facial-recognition-tech

A couple of weeks later when they decided to pursue the case, all they had was the address where the transaction took place and the nickname Lynch had given them, "Midnight." **They sent a photo to the Sheriff's Office Crime Analysis Unit, and the unit sent back Lynch as a potential match.**

iii.) National Database + Facial Rec.

Some of the longest-running and largest systems are found at the state and local level. The Pinellas County Sheriff's Office in Florida, for example, began implementing its current system in 2001.61 Over 5,300 officials from 242 federal, state, and local agencies have access to the system.62 In Pennsylvania, officials from over 500 agencies already use the state's face recognition system, which is open to all 1,020 law enforcement agencies in the state.63

JNET Facial Recognition System (JFRS) uses DataWorks Plus' FACE Plus product, a web-based solution that provides accurate, reliable identification, and which incorporates NEC's NeoFace™ facial recognition matching software technology to process and compare images. The system serves more than 800 contributing law enforcement and other state offices in Pennsylvania and includes more than 250 capture locations, more than 2.5 million arrest records, and 38,000 web retrieval users sharing data records and mug shot images across the state's WAN.

JFRS enables Pennsylvania's criminal justice professionals to verify or discover identity matches through one-to-one or one-to-many searches in a database sized for 3.5 million criminal booking images. So far, the JFRS identity searches have aided investigators in solving numerous cases, including homicides, robberies, burglaries, fraud and identity theft.

JFRS also includes the PA Watchlist functionality that enables users in the field to add suspect images from bank cameras, ATMs, retail security cameras and other sources to the watch list, enhancing the opportunity for additional identifications.

According to Harry Giordano, Special Projects manager for JNET, successes have occurred during the JNET System Training Sessions, which are currently taking place at Computer Training Labs across the commonwealth. "Officers coming to the JNET Training Sessions are asked to bring photos of unknown suspects from open cases and, using the system for the first time during training, are getting HITS and solving crimes," said Mr. Giordano. "Thanks to DataWorks Plus' intuitive Graphical User Interface and accuracy of the core facial recognition technology even first-time users are able to get positive results."

Over 39,000 municipal, county, state and federal justice professionals use JNET to access critical information and securely conduct investigations. JNET provides role-based access to over 35 distinct applications. In addition, JNET uses a service oriented architecture (SOA) model to broker the exchange of over 600 million messages annually between business partners. The JNET infrastructure connects all 67 Pennsylvania counties, 38 state agencies, and 37 federal law enforcement agencies.

JFRS provides a host of imaging tools that allow photographs to be cropped, rotated or manipulated to assist with comparison. Furthermore, JFRS employs two unique search algorithm technologies. Photographs submitted into JFRS by investigators are automatically analyzed by both search algorithms, ensuring that law enforcement benefits from multiple technologies. With JFRS deployed on JNET, the system can be made available to any law enforcement agency in Pennsylvania. Law enforcement professionals from more than 500 agencies have completed training and have access to JFRS.

iv.) Research Articles:

http://www.wired.co.uk/article/facial-recognition-systems-can-identify-you-even-if-your-face-is-blurred

"The researchers said only 10 fully-visible examples of a person's face were needed to identify a blurred image with 91.5 per cent accuracy. With an average of just 1.25 tagged images, the system could still correctly identify an individual 56.8 per cent of the time, which is 73 times higher than chance would allow.

It fared worse in "across event" measurements - those in which the lighting, clothing and context had changed - but still performed at 17 times the rate of chance, identifying people in 31.9 per cent of obscured images.

The researchers also tested different obfuscation methods to see if there was variance in the identification performance. By attempting to recognise non-tagged Gaussian blurs, white boxes and black box images they found that the best method for staying anonymous is to post all your pictures to Facebook with a black box over your face and shoulders. The next safest would be blocking it out with a white box, then a Gaussian blur. "

Jacob

Mike, thank you. How often? What do u do now to appease the calls? Not much you can do?

Jacob

On Wednesday, April 11, 2018, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
Jacob,
We definitely get these type of calls. I'm headed in now. I'll talk with the guys and get back to you with a date.
Thanks
Mike

Keep up the great work.

On Apr 10, 2018, at 6:45 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

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Jacob

how often? few times per year?

On Wed, Apr 11, 2018 at 7:13 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
Look at videos and maybe be the officers or detectives recognize the guy.

On Apr 11, 2018, at 7:01 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Mike, thank you. How often? What do u do now to appease the calls? Not much you can do?

Jacob

On Wednesday, April 11, 2018, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
Jacob,
We definitely get these type of calls. I'm headed in now. I'll talk with the guys and get back to you with a date.
Thanks
Mike

Keep up the great work.

On Apr 10, 2018, at 6:45 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, check this out. Do you think your department could collaborate on below cases? Would it make sense for a hospital to call you ever?

https://americansecuritytoday.com/nypd-wants-licenses-facial-recognition-learn-multi-video/

"Besides the obvious benefit of identifying suspects in active investigations, this could:

Assist lost dementia patients.

- Such a system could identify lost adults with cognitive disorders like Alzheimer's, who might not know who they are or where they came from.
- One example: *Wall Street Journal* points out that this would have been useful in the case of a Staten Island woman with Alzheimer's who police found in 2014, and who could only be identified thanks to a minor traffic violation.

Identify the unidentified in hospitals.

- Facial recognition could help hospitals put names to unconscious patients who come in without ID, as well as John/Jane Doe cases.
- Connecting these individuals with their families could save them a lot of agony in wondering what happened/is happening to loved ones.

On Tue, Dec 12, 2017 at 12:20 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Will do – Hope all is well with too.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, December 12, 2017 12:18 PM

To: Michael Botieri
Cc: Ryan Ruggiero
Subject: Re: Initial Search Follow Up Note

Chief let's meet soon! Hope all is well.

On Tue, Dec 12, 2017 at 12:09 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

That sounds like it would be a great value for the evidence room.

Mike

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, December 12, 2017 11:44 AM
To: Michael Botieri
Cc: Ryan Ruggiero

Subject: Re: Initial Search Follow Up Note

Chief, I just talked to one contact I made at IACP, who is a chief in Indiana. he said that for them, it would be a huge value to just have a log of the people coming and going from the evidence room. Right now, there's no real log (don't have someone's face logged upon entry and exit); it really just takes one bad apple to mess everything up and cause a bunch of cases to be dismissed when evidence is tampered with; they could be allowing others in upon entry as well. Apparently they're audited in someway by NCIS yearly and this would help that audit. Relatedly, it seems if people are in the agency and don't have some CJIS background check, it's of value to him to know that everyone who entered, has had this done. He also wants cameras inside the facility and outside to be running facial continually. Maybe change can come Mont! I've been thinking about giving it a push next year.

Here's a google docs with some evidence room notes:

https://docs.google.com/document/d/1t4cN21wDNkfNjkE3Di8462WxpQCR3elNwWPjFZWzkvM/edit?usp=sharing

I will add more and organize a bit more later on.

On Thu, Nov 30, 2017 at 7:36 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

 Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 29, 2017 at 4:21 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

I'll check it out Jacob

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, November 29, 2017 12:44 PM
To: Michael Botieri; Ryan Ruggiero
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Also related in news past couple days on search:

i.) Seems Amazon is in game. I think our service could be better still and I'm sure similar price:

http://www.nextgov.com/cio-briefing/2017/11/how-one-law-enforcement-agency-using-facial-recognition-identify-suspects/142816/

ii.)

I did also compile a large list of notes/thoughts on facial access management for evidence rooms over holidays. Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 22, 2017 at 1:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Thanks Jacob. Have a great Thanksgiving.

On Nov 22, 2017, at 12:56 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Guys, I do plan to send a facial access management note in regards to evidence rooms over holidays; I've been thinking about it.

Have a good holiday!

Best,

Jacob

On Sun, Nov 19, 2017 at 8:12 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief,

I thought about the search for a-while this weekend, as I looked at the images from Wal-Mart, etc. and read some notes I took over past year. Skim the notes below. Few initial things and pls add the detective we met to the chain:

1. As the recent press and research articles below show, I do think that with a decent database to match from, at least 30% of the time, the facial technology should work well enough from the poor image quality. I'm wondering if you have thoughts on if this is enough to be successful? I guess I would think that would be very helpful, but obviously this means, more than half the time it may not be. You mentioned you guys would be interested weekly, some for immediate identification, some more lax (like shoplifting ones).

2. I don't think our facial engine is currently optimized for the blurry images you gave me, but we could optimize it within a few months for sure.

3. Have you heard of any of the tools listed below? So there's nothing in MA at all at crime labs or at any agencies or nothing like JNET in Philadelphia? Boston PD itself has nothing?

4. Could we reasonably again access to MA RMV databases or other similar databases in MA? I know we discussed this at meeting and the consensus was yes. I guess I'm wondering how long would this take? No agencies around the area take advantage of it right now? Why are Illinois and Pennsylvania different? It's obviously going to have to be a combination of really good tech (which we should be there soon) and also a decent database that we can go off from.

Things to look at:

i.) **Recent Press Other Tools:**

http://www.illinoishomepage.net/news/local-news/facial-recognition-solves-crime-cases/859552732

He ran Jennifer's pictures through their arrest files which have 58,000 mug shots from Macon County. And even with a blurry image, the computer was able to match her fake surveillance picture to my pretend mug shots. He says it's as easy pie...P.I.E.

It's a lead and a starting point to build their case. When they have a decent image to go off of, German says 30% of cases are solved through this technology.

ii.) **Crime Analysis Unit**

https://www.usnews.com/news/best-states/florida/articles/2017-05-28/florida-case-is-poster-child-for-facial-recognition-tech

A couple of weeks later when they decided to pursue the case, all they had was the address where the transaction took place and the nickname Lynch had given them, "Midnight." **They sent a photo to the Sheriff's Office Crime Analysis Unit, and the unit sent back Lynch as a potential match.**

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"Our officers, as a matter of officer safety, will runs warrant check as one of the first thing they do when speaking with people who come to the PD.

This technology would just automate that process, and in fact, it would likely make it safer because the officer would know who the person is before engaging with them.

"Yes, officers will ask for ID and then use their mobile radio to request a warrant check from dispatch. They may not do this for every person they come into contact with, but as a rule, it will be a majority. This is a common practice. If the names are known in advance of an officer arriving, our dispatchers will run the (local) warrant check in advance of the contact. This is why having facial recognition on Body Camera's is another interesting feature. I would say this is not a matter of "if," but will be a matter of routine protocol automated by AI.
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3. What does everyone think a minimum success would be? Like 1 suspect per year? That would at least justify it? What are your thoughts? Pat as your offices manually check now, how often have they historically caught someone with a warrant?

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Lafayette lobby statistics:

"But if you had to just pull a number out it's probably close to a thousand people a day are in the lobby for service. It's also one of the main entrances for employees so you will see maybe 30 of us walking thru and going straight in to the doorway and not interacting with the counter multiple times a day.

The population in the county is about 185k people with about 70k in city limits and we have a few that don't follow the law. There's 1350 warrants for just LPD and some of those are multiple for the same person so backing out duplicates there are 1250 people that are wanted just by us."

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Thoughts? Comments? Opinions?

Best,
Jacob

Jacob,

A few quick responses in red below.

Patrick J. Flannelly
Chief of Police
Lafayette Police Department
20 N. 6th St.
Lafayette, IN 47901
(765) 807-1210 (Office)
(765) 479-4445 (Mobile)
pjflannelly@lafayette.in.gov
www.lafayettepolice.us

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Sent: Wednesday, April 11, 2018 12:23 PM
To: Ed Davis <edavis@eddavisllc.com>; Michael Botieri <chiefbotieri@plymouthpolice.com>; Patrick J. Flannelly <pjflannelly@lafayette.in.gov>
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In speaking with our Chief Records Technician, she estimates that we, on average, will make 4 to 8 arrest per month in our lobby. These arrests include those that are coming to turn themselves in, but of these numbers, most of them are just unaware that they have a warrant. She estimates that we would probably double this number using facial recognition, but that might be a bit high in my opinion. These warrants would not traffic warrants where a person has never been arrested before because we would not have a photograph on file.

These numbers would be much higher if we still pre-screened after hours subjects for admittance into our homeless shelter. This is something that most agencies probably would never deal with, we just did this for a few years after having some violent battery cases occur in one of our shelters when subjects were admitted after hours. We began a program where subjects were required to get a pass from our Records Division for admittance if they were not pre-screened. This led to a lot of arrest, mostly low level alcohol/drug related cases.

3. What does everyone think a minimum success would be? Like 1 suspect per year? That would at least justify it? What are your thoughts? Pat as your offices manually check now, how often have they historically caught someone with a warrant?

If we were to maintain our current numbers, maybe with a slight increase, I certainly feel this would justify the expense. Automating the process just reduces the likelihood of error and could help improve customer service overall (unless you are one of the people that enters the lobby with a warrant on file).

4. There will of course be some false positive and also missed suspects. I wonder what everyone thinks is acceptable. I think our true positive will be 95% accurate at 1 false positive per month. 98% accurate at 1 false positive a week for below volume. To be clear, what makes the statistics clearly work is we err on the side of caution, i.e. we would rather not generate a match unless we're pretty sure there's a match:

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There is a verification process that officers will undertake before taking anyone into custody on a warrant, so we would view this technology only as lead information and would not arrest based on a "potential match" identified with facial recognition technology solely. I think a true positive rate of 95% is sufficient grounds to initiate a non-consensual stop to investigate further. That might take some vetting in the courts, but I think probably anything above 60 to 70% would be grounds for a Terry Stop. Again, good policy will be need to be in place in advance.

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I have spoken with two of our area school superintendents since we began this conversation. Both are interested in learning more about the potential safety benefits and seem open to a pilot project. So, I guess I am changing my tune a little bit there. Again, I think a lot depends on how this technology is going to be used and that is communicated well in advance. If we start making truancy arrest or disciplining students for things captured by facial recognition that do not amount to priority safety measures it might become problematic.

Thoughts? Comments? Opinions?

Best,
Jacob

Pat,

That is really good info. Few follow-ups for everyone:

i.) So right now, you arrest 4 to 8 people a month in your lobby. Are they just arrested normally by the officer; with handcuffs? Wow, I would never have guessed it would have been so high. Is it mostly low level stuff now? Person arrested and then freed? Are they verbally charged and then handcuffed?

ii.) We'll definitely be way higher than 60 to 70 percent, so no worries there. With a true positive of 95%+ at these volumes, mainly wondering if the false positive is fine and if missing people so of the time is ok. Again I think the #'s are pretty good here. 1 false positive every couple of week or once a month of course maybe higher than the status quo. The good thing is all they'll have to do is visually look at the match with the video feed snippet; and then decide whether to take action. So FP is pretty harmless I think.

Chief Botieri what do you think about everything?

Jacob

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Thoughts? Comments? Opinions?

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> Plymouth Police Department
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> 20 Long Pond Road
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> Plymouth, MA 02360
>
> 508-830-4218 X 226
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>
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A few quick responses in red below.

Patrick J. Flannelly

Chief of Police

Lafayette Police Department

20 N. 6th St.

Lafayette, IN 47901

(765) 807-1210 (Office)

(765) 479-4445 (Mobile)

pjflannelly@lafayette.in.gov

www.lafayettepolice.us

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Thoughts? Comments? Opinions?

Best,

Jacob

Good morning Gentlemen,

It is great to meet you and to be a part of this fascinating discussion. My apologies for getting back to you so late. My week was crazy and for a thoughtful response I had to wait until Saturday to secure the necessary time.

Fist, I agree that this technology is vital and is the future of law enforcement. I also know that if I tried to implement this system in Boston I would be run out of town by the liberal activists and privacy zealots, to say nothing of the Boston Globe and their advocacy for undocumented imigrants However, and thankfully, each community is different. I think that each police chief needs to make the call for their community. I am a community policing advocate, so I believe that this type of screening, in a place that we want everyone to feel free to access for help is not advisable. For you Jacob, the key is to ensure you are comfortable in each installation, as a focused political attack is a potential existential threat to your new business.

This technology needs a real life experiment and Jacob is lucky to have two police leaders who are interested in working with him. Good data from a successful deployment will establish a base line for purchasing decisions. The proposal to use police lobbies against the warrant database will clearly get you the most data in the fastest time. The devil is in a defensible outcome from the positive identifications. For instance, many arrests for low level violations of the law could be viewed poorly by the public. However, if arrests were focused only on felony offenses or sex offenders, no one could credibly protest. The key is to do this experiment with as little controversy as possible.

When I think about options for deployment and, after Parkland, that the nation is clamoring for a method to secure schools, this is an attractive option. Other potential locations are national sporting events, some federal facilities, the federal reserve system and others.

I hope this lengthy response establishes my point and is helpful to the big picture.

Sincerely,
Ed

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Sent: Friday, April 13, 2018 7:19 AM
To: Patrick J. Flannelly; Ed Davis; Michael Botieri
Subject: Re: Facial Lobby Comments + Opinions

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--
Edward F. Davis
CEO, Edward Davis, LLC
(617) 594-3650
www.eddavisllc.com

EDWARD DAVIS LLC
Expert Security. Integrated Business Solutions.

Ryan, do you think it maybe possible just to access the camera stream directly? That way we wouldn't have to worry about the VMS for now. What do you think? Any updates?

On Tue, Mar 6, 2018 at 6:35 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Ryan any update on lobby camera access? Hope all is well!

On Fri, Feb 23, 2018 at 2:46 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Ryan some good press today! https://www.americaninno.com/boston/boston-startup/mark-cuban-backed-startup-uses-a-i-to-redact-faces-in-police-videos/

Maybe meet again week after next? You guys around? I just messaged Chief as well.

On Fri, Feb 16, 2018 at 11:43 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Ryan you get any feedback on this? What VMS is there? Do you know? I think we'd just integrate with the VMS right? That is most important part.

On Tue, Feb 6, 2018 at 3:05 PM, Ryan Ruggiero <Ruggiero@plymouthpolice.com> wrote:

Waiting to hear back on the best way to do this.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Monday, February 05, 2018 8:53 PM
To: Ryan Ruggiero <Ruggiero@plymouthpolice.com>
Cc: Antonio Gomes <ltgomes@plymouthpolice.com>

Subject: Re: RESCHEDULE TODAY'S MEETING

Ryan?

On Tue, Jan 30, 2018 at 8:31 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Ryan, did you guys look at all into the lobby camera access?

Jacob

On Thu, Jan 18, 2018 at 5:34 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Tony/Ryan, nice meeting.

Forgot to mention I had dug this up:

http://www.tauntongazette.com/x273440750/Mass-Most-Wanted-Shoplifting-in-Plymouth-Walmart

Best,

Jacob

On Thu, Jan 18, 2018 at 9:33 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Thx!

On Thursday, January 18, 2018, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Good morning,

Yes. 2:00 today.

Thank you.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Thursday, January 18, 2018 9:18 AM
To: Nancy Dillon
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: RESCHEDULE TODAY'S MEETING

Nancy we good to meet today at 2? I could also come by earlier like 1 or 1:30, if others can make it.

On Thu, Jan 11, 2018 at 9:09 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Yes see you the 18th!

On Thu, Jan 11, 2018 at 9:08 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Yes, no restrictions.   We will see you Thursday, January 11, 2018 @ 2:00 PM.

Thanks.

Nancy Dillon

Administrative Secretary

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 272

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Thursday, January 11, 2018 9:06 AM
To: Nancy Dillon
Cc: Ryan Ruggiero; Antonio Gomes
Subject: Re: RESCHEDULE TODAY'S MEETING

Yes that works.

Can you guys view google docs ok?

On Thu, Jan 11, 2018 at 9:05 AM, Nancy Dillon <dillon@plymouthpolice.com> wrote:

Good Morning, Jacob,

Unfortunately, we will need to cancel and reschedule today's 2:00 appointment.   Chief Botieri will not be available.   Can you do next Thursday, January 18, 2018 at 2:00 PM?

Thank you.

Nancy Dillon

Administrative Secretary

Plymouth Police Department

20 Long Pond Road

Plymouth, MA   02360

508-830-4218 X 272

Chief,

I'm international next week.

Do you have time to meet week after next? If not, the week after?

Hope all is well!

Jacob

On Wed, Apr 11, 2018 at 11:47 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> At least a few times a year.
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA   02360
>
> 508-830-4218 X 226
>
> chiefbotieri@plymouthpolice.com
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Wednesday, April 11, 2018 7:19 AM
> **To:** Michael Botieri
>
>
> **Subject:** Re: Initial Search Follow Up Note
>
>
> how often? few times per year?
>
>
> On Wed, Apr 11, 2018 at 7:13 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>
> Look at videos and maybe be the officers or detectives recognize the guy.
>
> On Apr 11, 2018, at 7:01 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>
>> Mike, thank you. How often? What do u do now to appease the calls? Not much you can do?
>>
>>
>> Jacob
>>
>> On Wednesday, April 11, 2018, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>>
>> Jacob,
>>
>> We definitely get these type of calls. I'm headed in now. I'll talk with the guys and get back to you with a date.
>>
>> Thanks
>>
>> Mike
>>
>>
>> Keep up the great work.
>>
>>
>> On Apr 10, 2018, at 6:45 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, check this out. Do you think your department could collaborate on below cases? Would it make sense for a hospital to call you ever?

https://americansecuritytoday.com/nypd-wants-licenses-facial-recognition-learn-multi-video/

"Besides the obvious benefit of identifying suspects in active investigations, this could:

Assist lost dementia patients.

· Such a system could identify lost adults with cognitive disorders like Alzheimer's, who might not know who they are or where they came from.

· One example: *Wall Street Journal* points out that this would have been useful in the case of a Staten Island woman with Alzheimer's who police found in 2014, and who could only be identified thanks to a minor traffic violation.

Identify the unidentified in hospitals.

· Facial recognition could help hospitals put names to unconscious patients who come in without ID, as well as John/Jane Doe cases.

· Connecting these individuals with their families could save them a lot of agony in wondering what happened/is happening to loved ones.

On Tue, Dec 12, 2017 at 12:20 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Will do – Hope all is well with too.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, December 12, 2017 12:18 PM

To: Michael Botieri
Cc: Ryan Ruggiero
Subject: Re: Initial Search Follow Up Note

Chief let's meet soon! Hope all is well.

On Tue, Dec 12, 2017 at 12:09 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

That sounds like it would be a great value for the evidence room.

Mike

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, December 12, 2017 11:44 AM
To: Michael Botieri
Cc: Ryan Ruggiero

Subject: Re: Initial Search Follow Up Note

Chief, I just talked to one contact I made at IACP, who is a chief in Indiana. he said that for them, it would be a huge value to just have a log of the people coming and going from the evidence room. Right now, there's no real log (don't have someone's face logged upon entry and exit); it really just takes one bad apple to mess everything up and cause a bunch of cases to be dismissed when evidence is tampered with; they could be allowing others in upon entry as well. Apparently they're audited in

someway by NCIS yearly and this would help that audit. Relatedly, it seems if people are in the agency and don't have some CJIS background check, it's of value to him to know that everyone who entered, has had this done. He also wants cameras inside the facility and outside to be running facial continually. Maybe change can come Mont! I've been thinking about giving it a push next year.

Here's a google docs with some evidence room notes:

https://docs.google.com/document/d/1t4cN21wDNkfNjkE3Di8462WxpQCR3elNwWPjFZWzkvM/edit?usp=sharing

I will add more and organize a bit more later on.

On Thu, Nov 30, 2017 at 7:36 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 29, 2017 at 4:21 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

I'll check it out Jacob

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, November 29, 2017 12:44 PM
To: Michael Botieri; Ryan Ruggiero
Subject: Re: Initial Search Follow Up Note

Also related in news past couple days on search:

i.) Seems Amazon is in game. I think our service could be better still and I'm sure similar price:

http://www.nextgov.com/cio-briefing/2017/11/how-one-law-enforcement-agency-using-facial-recognition-identify-suspects/142816/

ii.)

http://www.11alive.com/article/news/local/is-it-mariah-fbi-asking-for-help-identifying-woman-child-in-photos/85-495407961

I did also compile a large list of notes/thoughts on facial access management for evidence rooms over holidays. Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 22, 2017 at 1:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Thanks Jacob. Have a great Thanksgiving.

On Nov 22, 2017, at 12:56 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Guys, I do plan to send a facial access management note in regards to evidence rooms over holidays; I've been thinking about it.

Have a good holiday!

Best,

Jacob

On Sun, Nov 19, 2017 at 8:12 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief,

I thought about the search for a-while this weekend, as I looked at the images from Wal-Mart, etc. and read some notes I took over past year. Skim the notes below. Few initial things and pls add the detective we met to the chain:

1. As the recent press and research articles below show, I do think that with a decent database to match from, at least 30% of the time, the facial technology should work well enough from the poor image quality. I'm wondering if you have thoughts on if this is enough to be successful? I guess I would think that would be very helpful, but obviously this means, more than half the time it may not be. You mentioned you guys would be interested weekly, some for immediate identification, some more lax (like shoplifting ones).

2. I don't think our facial engine is currently optimized for the blurry images you gave me, but we could optimize it within a few months for sure.

3. Have you heard of any of the tools listed below? So there's nothing in MA at all at crime labs or at any agencies or nothing like JNET in Philadelphia? Boston PD itself has nothing?

4. Could we reasonably again access to MA RMV databases or other similar databases in MA? I know we discussed this at meeting and the consensus was yes. I guess I'm wondering how long would this take? No agencies around the area take advantage of it right now? Why are Illinois and Pennsylvania different? It's obviously going to have to be a combination of really good tech (which we should be there soon) and also a decent database that we can go off from.

Things to look at:

i.) **Recent Press Other Tools:**

http://www.illinoishomepage.net/news/local-news/facial-recognition-solves-crime-cases/859552732

He ran Jennifer's pictures through their arrest files which have 58,000 mug shots from Macon County. And even with a blurry image, the computer was able to match her fake surveillance picture to my pretend mug shots. He says it's as easy pie...P.I.E.

It's a lead and a starting point to build their case. When they have a decent image to go off of, German says 30% of cases are solved through this technology.

ii.) **Crime Analysis Unit**

A couple of weeks later when they decided to pursue the case, all they had was the address where the transaction took place and the nickname Lynch had given them, "Midnight." **They sent a photo to the Sheriff's Office Crime Analysis Unit, and the unit sent back Lynch as a potential match.**

iii.) National Database + Facial Rec.

Some of the longest-running and largest systems are found at the state and local level. The Pinellas County Sheriff's Office in Florida, for example, began implementing its current system in 2001.61 Over 5,300 officials from 242 federal, state, and local agencies have access to the system.62 In Pennsylvania, officials from over 500 agencies already use the state's face recognition system, which is open to all 1,020 law enforcement agencies in the state.63

JNET Facial Recognition System (JFRS) uses DataWorks Plus' FACE Plus product, a web-based solution that provides accurate, reliable identification, and which incorporates NEC's NeoFace™ facial recognition matching software technology to process and compare images. The system serves more than 800 contributing law enforcement and other state offices in Pennsylvania and includes more than 250 capture locations, more than 2.5 million arrest records, and 38,000 web retrieval users sharing data records and mug shot images across the state's WAN.

JFRS enables Pennsylvania's criminal justice professionals to verify or discover identity matches through one-to-one or one-to-many searches in a database sized for 3.5 million criminal booking images. So far, the JFRS identity searches have aided investigators in solving numerous cases, including homicides, robberies, burglaries, fraud and identity theft.

JFRS also includes the PA Watchlist functionality that enables users in the field to add suspect images from bank cameras, ATMs, retail security cameras and other sources to the watch list, enhancing the opportunity for additional identifications.

According to Harry Giordano, Special Projects manager for JNET, successes have occurred during the JNET System Training Sessions, which are currently taking place at Computer Training Labs across the commonwealth. "Officers coming to the JNET Training Sessions are asked to bring photos of unknown suspects from open cases and, using the system for the first time during training, are getting HITS and solving crimes," said Mr. Giordano. "Thanks to DataWorks Plus' intuitive Graphical User Interface and accuracy of the core facial recognition technology even first-time users are able to get positive results."

Over 39,000 municipal, county, state and federal justice professionals use JNET to access critical information and securely conduct investigations. JNET provides role-based access to over 35 distinct applications. In addition, JNET uses a service oriented architecture (SOA) model to broker the exchange of over 600 million messages annually between business partners. The JNET infrastructure connects all 67 Pennsylvania counties, 38 state agencies, and 37 federal law enforcement agencies.

JFRS provides a host of imaging tools that allow photographs to be cropped, rotated or manipulated to assist with comparison. Furthermore, JFRS employs two unique search algorithm technologies. Photographs submitted into JFRS by investigators are automatically analyzed by both search algorithms, ensuring that law enforcement

benefits from multiple technologies. With JFRS deployed on JNET, the system can be made available to any law enforcement agency in Pennsylvania. Law enforcement professionals from more than 500 agencies have completed training and have access to JFRS.

iv.) Research Articles:

http://www.wired.co.uk/article/facial-recognition-systems-can-identify-you-even-if-your-face-is-blurred

https://www.wired.com/2016/09/machine-learning-can-identify-pixelated-faces-researchers-show/

"The researchers said only 10 fully-visible examples of a person's face were needed to identify a blurred image with 91.5 per cent accuracy. With an average of just 1.25 tagged images, the system could still correctly identify an individual 56.8 per cent of the time, which is 73 times higher than chance would allow.

It fared worse in "across event" measurements - those in which the lighting, clothing and context had changed - but still performed at 17 times the rate of chance, identifying people in 31.9 per cent of obscured images.

The researchers also tested different obfuscation methods to see if there was variance in the identification performance. By attempting to recognise non-tagged Gaussian blurs, white boxes and black box images they found that the best method for staying anonymous is to post all your pictures to Facebook with a black box over your face and shoulders. The next safest would be blocking it out with a white box, then a Gaussian blur. "

Jacob

These are all good thoughts. Thank you Ed and everyone. I want to move forward. However, I do think, after Ed's comments, we should discuss this in more detail. I think we should iron out Ed's comment: " I am a community policing advocate, so I believe that this type of screening, in a place that we want everyone to feel free to access for help is not advisable".

1. For example, I was just reading about this person in Tennessee today and they had their own political attack it seems in that state going after schools and other places:

http://www.guns.com/2018/04/18/tennessee-veteran-sues-state-to-share-facial-recognition-software-without-a-license/

Apparently, he has similar ideas as us and apparently the alert mechanism, requires him to obtain an onerous license, which could take 5 years to obtain:

"when it ordered he obtain a license to install alarm systems before donating his software to a local synagogue. "

"While the board itself allegedly copped to the software's security potential, officials said Jackson's product inhabits a "gray area" within the industry and told him to obtain proper licensing before distributing it — anywhere. The process, however, could require Jackson spend five years installing security alarms as an apprentice.

"

2. FB for example has a class action law-suit in the news just yesterday for photo-identification:

https://techcrunch.com/2018/04/16/judge-says-class-action-suit-against-facebook-over-facial-recognition-can-go-forward/

I wonder if we'll ever face similar issues as 1 or 2 above). The timing couldn't be better for us to give this a go.

Jacob

On Sat, Apr 14, 2018 at 9:49 AM, Ed Davis <edavis@eddavisllc.com> wrote:
> Good morning Gentlemen,
>
> It is great to meet you and to be a part of this fascinating discussion. My apologies for getting back to you so late. My week was crazy and for a thoughtful response I had to wait until Saturday to secure the necessary time.
>
> Fist, I agree that this technology is vital and is the future of law enforcement. I also know that if I tried to implement this system in Boston I would be run out of town by the liberal activists and privacy zealots, to say nothing of the Boston Globe and their advocacy for undocumented imigrants However, and thankfully, each community is different. I think that each police chief needs to make the call for their community. I am a community policing advocate, so I believe that this type of screening, in a place that we want everyone to feel free to access for help is not advisable. For you Jacob, the key is to ensure you are comfortable in each installation, as a focused political attack is a potential existential threat to your new business.
>
> This technology needs a real life experiment and Jacob is lucky to have two police leaders who are interested in working with him. Good data from a successful deployment will establish a base line for purchasing decisions. The proposal to use police lobbies against the warrant database will clearly get you the most data in the fastest time. The devil is in a defensible outcome from the positive identifications. For instance, many arrests for low level violations of the law could be viewed poorly by the public. However, if arrests were focused only on felony offenses or sex offenders, no one could credibly protest. The key is to do this experiment with as little controversy as possible.
>
> When I think about options for deployment and, after Parkland, that the nation is clamoring for a method to secure schools, this is an attractive option. Other potential locations are national sporting events, some federal facilities, the federal reserve system and others.
>
> I hope this lengthy response establishes my point and is helpful to the big picture.
>
> Sincerely,
> Ed

On Fri, Apr 13, 2018 at 5:44 PM Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> Guys,
>
> One other related item I thought of.

I went to a presentation in DC last month and I heard surprisingly that only '18% of tdsb (Terrorist Screening Database) has at least one biometric', with facial being the large portion by far.

Pat, do you have a set of people on file with warrants that you don't have a matching photo of them? Maybe our service could also include this---we find a photo of anyone who doesn't have one on file, by searching the web or elsewhere. And also some age progression of current people on file, so it's not outdated ever.

Apparently for most people on the national watchlist, we don't even have a photo of them.

Best,
Jacob

On Fri, Apr 13, 2018 at 4:18 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Jacob,
>
>
> Most of those are warrant arrests. I do not think the False Positive is a big problem at this point.
>
>
> Mike
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
>
> 508-830-4218 X 226
>
> chiefbotieri@plymouthpolice.com
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Friday, April 13, 2018 7:19 AM
> **To:** Patrick J. Flannelly; Ed Davis; Michael Botieri
> **Subject:** Re: Facial Lobby Comments + Opinions
>
>
> Pat,
>
>
> That is really good info. Few follow-ups for everyone:
>
>
> i.) So right now, you arrest 4 to 8 people a month in your lobby. Are they just arrested normally by the officer; with handcuffs? Wow, I would never have guessed it would have been so high. Is it mostly low level stuff now? Person arrested and then freed? Are they verbally charged and then handcuffed?
>
>
> ii.) We'll definitely be way higher than 60 to 70 percent, so no worries there. With a true positive of 95%+ at these volumes, mainly wondering if the false positive is fine and if missing people so of the time is ok. Again I think the #'s are pretty good here. 1 false positive every couple of week or once a month of course maybe higher than the status quo. The good thing is all they'll have to do is visually look at the match with the video feed snippet; and then decide whether to take action. So FP is pretty harmless I think.
>
>
> Chief Botieri what do you think about everything?
>
>
> Jacob
>
>
> On Thu, Apr 12, 2018 at 3:01 PM, Patrick J. Flannelly <pjflannelly@lafayette.in.gov> wrote:
>> Jacob,

A few quick responses in red below.

Patrick J. Flannelly

Chief of Police

Lafayette Police Department

20 N. 6th St.

Lafayette, IN 47901

(765) 807-1210 (Office)

(765) 479-4445 (Mobile)

pjflannelly@lafayette.in.gov

www.lafayettepolice.us

From: jsniff12@gmail.com <jsniff12@gmail.com> **On Behalf Of** Jacob Sniff
Sent: Wednesday, April 11, 2018 12:23 PM
To: Ed Davis <edavis@eddavisllc.com>; Michael Botieri <chiefbotieri@plymouthpolice.com>; Patrick J. Flannelly <pjflannelly@lafayette.in.gov>
Subject: Facial Lobby Comments + Opinions

Ed Davis/Chief Mike Botieri, and Chief Pat Flannelly,

I've been discussing multiple uses of facial rec. with each of you. Ed, Pat is the Chief from Lafayette I mentioned. Mike, is the one from Plymouth in MA. Mike/Pat, I don't think you know each other either, but I believe I mentioned both of you to the other in past discussions; take this as the introduction :)

Right now, it seems the most interesting use case is facial rec. alerts from lobby cameras. I wanted to write a note, to solicit some comments and opinions on a few matters related to this:

1. To define what we mean, we are planning to move forward with the facial scanning in lobbies. More or less, the facial application will integrate and use existing cameras to scan everyone's face who enters a lobby, and compare to a local list of people that have open warrants (usually 5-10% of any town). It will have different categories of warrants and the officers will take different actions, based on the different categories. We will send any visual alerts back to the dispatchers/officers in the lobby to review and decide whether to take action on.

2. Ed, you mentioned that if we did the lobby idea in Boston, that they would go absolutely nuts and it would be a privacy disaster. Our discussion last week was that police departments are supposed to be welcoming and this would ultimately deter people from showing up.

I wonder everyone's thoughts. Pat and Mike are very open to it and think it has several benefits for their mid-sized agencies. At Pat's agency, you can see a quote from him below why it makes perfect sense:

"Our officers, as a matter of officer safety, will runs warrant check as one of the first thing they do when speaking with people who come to the PD.

This technology would just automate that process, and in fact, it would likely make it safer because the officer would know who the person is before engaging with them.

"Yes, officers will ask for ID and then use their mobile radio to request a warrant check from dispatch. They may not do this for every person they come into contact with, but as a rule, it will be a majority. This is a common practice. If the names are known in advance of an officer arriving, our dispatchers will run the (local) warrant check in advance of the contact. This is why having facial recognition on Body Camera's is another interesting feature. I would say this is not a matter of "if," but will be a matter of routine protocol automated by AI.

"

In speaking with our Chief Records Technician, she estimates that we, on average, will make 4 to 8 arrest per month in our lobby. These arrests include those that are coming to turn themselves in, but of these numbers, most of them are just unaware that they have a warrant. She estimates that we would probably double this number using facial recognition, but that might be a bit high in my opinion. These warrants would not traffic warrants where a person has never been arrested before because we would not have a photograph on file.

These numbers would be much higher if we still pre-screened after hours subjects for admittance into our homeless shelter. This is something that most agencies probably would never deal with, we just did this for a few years after having some violent battery cases occur in one of our shelters when subjects were admitted after hours. We began a program where subjects were required to get a pass from our Records Division for admittance if they were not pre-screened. This led to a lot of arrest, mostly low level alcohol/drug related cases.

3. What does everyone think a minimum success would be? Like 1 suspect per year? That would at least justify it? What are your thoughts? Pat as your offices manually check now, how often have they historically caught someone with a warrant?

If we were to maintain our current numbers, maybe with a slight increase, I certainly feel this would justify the expense. Automating the process just reduces the likelihood of error and could help improve customer service overall (unless you are one of the people that enters the lobby with a warrant on file).

4. There will of course be some false positive and also missed suspects. I wonder what everyone thinks is acceptable. I think our true positive will be 95% accurate at 1 false positive per month. 98% accurate at 1 false positive a week for below volume. To be clear, what makes the statistics clearly work is we err on the side of caution, i.e. we would rather not generate a match unless we're pretty sure there's a match:

Here are some #'s below:

-1k ppl per day

-50 percent hit rate = 500 people per day (raw detection)

-500*1000 = 500,000 match attempts (watch-list size of 1000)

-0.0000001*500,000 = ~1 false match per 20 days (FAR of .00001 percent)

Lafayette lobby statistics:

"But if you had to just pull a number out it's probably close to a thousand people a day are in the lobby for service. It's also one of the main entrances for employees so you will see maybe 30 of us walking thru and going straight in to the doorway and not interacting with the counter multiple times a day.

The population in the county is about 185k people with about 70k in city limits and we have a few that don't follow the law. There's 1350 warrants for just LPD and some of those are multiple for the same person so backing out duplicates there are 1250 people that are wanted just by us."

There is a verification process that officers will undertake before taking anyone into custody on a warrant, so we would view this technology only as lead information and would not arrest based on a "potential match" identified with facial recognition technology solely. I think a true positive rate of 95% is sufficient grounds to initiate a non-consensual stop to investigate further. That might take some vetting in the courts, but I think probably anything above 60 to 70% would be grounds for a Terry Stop. Again, good policy will be need to be in place in advance.

5. Pat, had the below opinion, when discussing the identification and then containment issues. Does everyone agree? Any opinions? Additional Thoughts?

"Well, I would say identifying the person and then knowing what to do with them are two different issues. The issue with Airports is that many people are just passing through and are nowhere near their originating jurisdiction. It would be very costly for airport police to arrest everyone wanted on a warrant, even if the originating jurisdiction has placed an Extradition hold on them, because they would be responsible for securing and maintaining the person until that happens, which can take up to weeks. Airports would likely just need to focus, in a way in which you have identified, a tiered approach to make a workflow decision in advance of the problem that would allow them to actually accomplish their mission.

This is not the same as in a mall or local jurisdiction as the population is going to be local. We would want to arrest all of them, or almost all of them, in an effort to clear out their case. A tiered approach is still applicable, just not as critical."

6. Are there potentially other markets where the tech makes more sense for now? Ed, you thought schools would be more tractable. It's interesting, I think Ed had exactly the opposite opinion of Pat, that police lobbies are good and schools are hard. I think I agree with Pat for now, dominate law enforcement and expand to other places.

I have spoken with two of our area school superintendents since we began this conversation. Both are interested in learning more about the potential safety benefits and seem open to a pilot project. So, I guess I am changing my tune a little bit there. Again, I think a lot depends on how this technology is going to be used and that is communicated well in advance. If we start making truancy arrest or disciplining students for things captured by facial recognition that do not amount to priority safety measures it might become problematic.

Thoughts? Comments? Opinions?

Best,

Jacob

Guys, seems at least Wisconsin schools maybe a good initial market:

MADISON - Wisconsin Attorney General Brad Schimel said the state will use **$30 million in grants** to ensure that by fall all Wisconsin schools are using a single secure entrance and other basic safeguards.

https://www.jsonline.com/story/news/politics/2018/04/25/wisconsin-spend-30-million-secure-entrances-all-state-schools-september-attorney-gschools-using-secu/549718002/

"The first category of grants will focus on basic safety steps such as making sure all classroom doors have locks and school entrances have glass that can resist shattering after being shot.

Schimel said he wanted schools to have **one locked entrance monitored by staff** rather than multiple entryways through which outsiders could come and go at will. Schools could also seek grants for alarms that would sound when someone from inside the school propped open an emergency exit."

On Wed, Apr 18, 2018 at 7:20 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> These are all good thoughts. Thank you Ed and everyone. I want to move forward. However, I do think, after Ed's comments, we should discuss this in more detail. I think we should iron out Ed's comment: " I am a community policing advocate, so I believe that this type of screening, in a place that we want everyone to feel free to access for help is not advisable".
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> 1. For example, I was just reading about this person in Tennessee today and they had their own political attack it seems in that state going after schools and other places:
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Sincerely,
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On Fri, Apr 13, 2018 at 5:44 PM Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

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One other related item I thought of.

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Pat, do you have a set of people on file with warrants that you don't have a matching photo of them? Maybe our service could also include this--- we find a photo of anyone who doesn't have one on file, by searching the web or elsewhere. And also some age progression of current people on file, so it's not outdated ever.

Apparently for most people on the national watchlist, we don't even have a photo of them.

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On Fri, Apr 13, 2018 at 4:18 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

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Mike

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

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Sent: Friday, April 13, 2018 7:19 AM
To: Patrick J. Flannelly; Ed Davis; Michael Botieri
Subject: Re: Facial Lobby Comments + Opinions

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Chief of Police

Lafayette Police Department

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Lafayette, IN 47901

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This technology would just automate that process, and in fact, it would likely make it safer because the officer would know who the person is before engaging with them.

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Here are some #'s below:

-1k ppl per day

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The population in the county is about 185k people with about 70k in city limits and we have a few that don't follow the law. There's 1350 warrants for just LPD and some of those are multiple for the same person so backing out duplicates there are 1250 people that are wanted just by us."

There is a verification process that officers will undertake before taking anyone into custody on a warrant, so we would view this technology only as lead information and would not arrest based on a "potential match" identified with facial recognition technology solely. I think a true positive rate of 95% is sufficient grounds to initiate a non-consensual stop to investigate further. That might take some vetting in the courts, but I think probably anything above 60 to 70% would be grounds for a Terry Stop. Again, good policy will be need to be in place in advance.

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I have spoken with two of our area school superintendents since we began this conversation. Both are interested in learning more about the potential safety benefits and seem open to a pilot project. So, I guess I am changing my tune a little bit there. Again, I think a lot depends on how this technology is going to be used and that is communicated well in advance. If we start making truancy arrest or disciplining students for things captured by facial recognition that do not amount to priority safety measures it might become problematic.

Thoughts? Comments? Opinions?

Best,

Jacob

--
Edward F. Davis
CEO, Edward Davis, LLC
(617) 594-3650
www.eddavisllc.com

Well done finding this opportunityJacob. If you need assistance with the state or schools, please let me know.

Sent from my iPhone

On Apr 28, 2018, at 9:12 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

> Guys, seems at least Wisconsin schools maybe a good initial market:
>
> MADISON - Wisconsin Attorney General Brad Schimel said the state will use **$30 million in grants** to ensure that by fall all Wisconsin schools are using a single secure entrance and other basic safeguards.
>
> https://www.jsonline.com/story/news/politics/2018/04/25/wisconsin-spend-30-million-secure-entrances-all-state-schools-september-attorney-gschools-using-secu/549718002/
>
> "The first category of grants will focus on basic safety steps such as making sure all classroom doors have locks and school entrances have glass that can resist shattering after being shot.
>
> Schimel said he wanted schools to have **one locked entrance monitored by staff** rather than multiple entryways through which outsiders could come and go at will. Schools could also seek grants for alarms that would sound when someone from inside the school propped open an emergency exit."
>
>> On Wed, Apr 18, 2018 at 7:20 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>> These are all good thoughts. Thank you Ed and everyone. I want to move forward. However, I do think, after Ed's comments, we should discuss this in more detail. I think we should iron out Ed's comment: " I am a community policing advocate, so I believe that this type of screening, in a place that we want everyone to feel free to access for help is not advisable".
>>
>> 1. For example, I was just reading about this person in Tennessee today and they had their own political attack it seems in that state going after schools and other places:
>>
>> http://www.guns.com/2018/04/18/tennessee-veteran-sues-state-to-share-facial-recognition-software-without-a-license/
>>
>> Apparently, he has similar ideas as us and apparently the alert mechanism, requires him to obtain an onerous license, which could take 5 years to obtain:
>>
>> "when it ordered he obtain a license to install alarm systems before donating his software to a local synagogue.
>> "
>>
>> "While the board itself allegedly copped to the software's security potential, officials said Jackson's product inhabits a "gray area" within the industry and told him to obtain proper licensing before distributing it — anywhere. The process, however, could require Jackson spend five years installing security alarms as an apprentice.
>> "
>>
>> 2. FB for example has a class action law-suit in the news just yesterday for photo-identification:
>>
>> https://techcrunch.com/2018/04/16/judge-says-class-action-suit-against-facebook-over-facial-recognition-can-go-forward/
>>
>> I wonder if we'll ever face similar issues as 1 or 2 above). The timing couldn't be better for us to give this a go.
>>
>> Jacob
>>
>>> On Sat, Apr 14, 2018 at 9:49 AM, Ed Davis <edavis@eddavisllc.com> wrote:
>>> Good morning Gentlemen,
>>>
>>> It is great to meet you and to be a part of this fascinating discussion. My apologies for getting back to you so late. My week was crazy and for a thoughtful response I had to wait until Saturday to secure the necessary time.

Fist, I agree that this technology is vital and is the future of law enforcement. I also know that if I tried to implement this system in Boston I would be run out of town by the liberal activists and privacy zealots, to say nothing of the Boston Globe and their advocacy for undocumented imigrants However, and thankfully, each community is different. I think that each police chief needs to make the call for their community. I am a community policing advocate, so I believe that this type of screening, in a place that we want everyone to feel free to access for help is not advisable. For you Jacob, the key is to ensure you are comfortable in each installation, as a focused political attack is a potential existential threat to your new business.

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>> **Sent:** Friday, April 13, 2018 7:19 AM
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>> **Subject:** Re: Facial Lobby Comments + Opinions
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Jacob

--
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EDWARD DAVIS LLC
Expert Security. Integrated Business Solutions.

Chief, does sometime next week work?

Jacob

On Wed, Apr 18, 2018 at 5:02 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> Chief,
>
> I'm international next week.
>
> Do you have time to meet week after next? If not, the week after?
>
> Hope all is well!
>
> Jacob
>
>
> On Wed, Apr 11, 2018 at 11:47 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>> At least a few times a year.
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>> *Chief Michael E. Botieri*
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>> **Subject:** Re: Initial Search Follow Up Note
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>> how often? few times per year?
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>> On Wed, Apr 11, 2018 at 7:13 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>> Look at videos and maybe be the officers or detectives recognize the guy.
>>
>> On Apr 11, 2018, at 7:01 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>> Mike, thank you. How often? What do u do now to appease the calls? Not much you can do?
>>>
>>> Jacob
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>>> On Wednesday, April 11, 2018, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>>> Jacob,
>>>
>>> We definitely get these type of calls. I'm headed in now. I'll talk with the guys and get back to you with a date.
>>>
>>> Thanks
>>>
>>> Mike

Keep up the great work.

On Apr 10, 2018, at 6:45 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

> Chief, check this out. Do you think your department could collaborate on below cases? Would it make sense for a hospital to call you ever?

https://americansecuritytoday.com/nypd-wants-licenses-facial-recognition-learn-multi-video/

"Besides the obvious benefit of identifying suspects in active investigations, this could:

Assist lost dementia patients.

· Such a system could identify lost adults with cognitive disorders like Alzheimer's, who might not know who they are or where they came from.

· One example: *Wall Street Journal* points out that this would have been useful in the case of a Staten Island woman with Alzheimer's who police found in 2014, and who could only be identified thanks to a minor traffic violation.

Identify the unidentified in hospitals.

· Facial recognition could help hospitals put names to unconscious patients who come in without ID, as well as John/Jane Doe cases.

· Connecting these individuals with their families could save them a lot of agony in wondering what happened/is happening to loved ones.

On Tue, Dec 12, 2017 at 12:20 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Will do – Hope all is well with too.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, December 12, 2017 12:18 PM

To: Michael Botieri
Cc: Ryan Ruggiero
Subject: Re: Initial Search Follow Up Note

Chief let's meet soon! Hope all is well.

On Tue, Dec 12, 2017 at 12:09 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

That sounds like it would be a great value for the evidence room.

Mike

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
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Cc: Ryan Ruggiero

Subject: Re: Initial Search Follow Up Note

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I will add more and organize a bit more later on.

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I'll check it out Jacob

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Wednesday, November 29, 2017 12:44 PM
To: Michael Botieri; Ryan Ruggiero
Subject: Re: Initial Search Follow Up Note

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http://www.11alive.com/article/news/local/is-it-mariah-fbi-asking-for-help-identifying-woman-child-in-photos/85-495407961

I did also compile a large list of notes/thoughts on facial access management for evidence rooms over holidays. Can you guys view google docs ok if I share it with your email addresses?

On Wed, Nov 22, 2017 at 1:56 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

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> Have a good holiday!

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shots. He says it's as easy pie...P.I.E.

It's a lead and a starting point to build their case. When they have a decent image to go off of, German says 30% of cases are solved through this technology.

ii.) **Crime Analysis Unit**

https://www.usnews.com/news/best-states/florida/articles/2017-05-28/florida-case-is-poster-child-for-facial-recognition-tech

A couple of weeks later when they decided to pursue the case, all they had was the address where the transaction took place and the nickname Lynch had given them, "Midnight." **They sent a photo to the Sheriff's Office Crime Analysis Unit, and the unit sent back Lynch as a potential match.**

iii.) National Database + Facial Rec.

Some of the longest-running and largest systems are found at the state and local level. The Pinellas County Sheriff's Office in Florida, for example, began implementing its current system in 2001.61 Over 5,300 officials from 242 federal, state, and local agencies have access to the system.62 In Pennsylvania, officials from over 500 agencies already use the state's face recognition system, which is open to all 1,020 law enforcement agencies in the state.63

JNET Facial Recognition System (JFRS) uses DataWorks Plus' FACE Plus product, a web-based solution that provides accurate, reliable identification, and which incorporates NEC's NeoFace™ facial recognition matching software technology to process and compare images. The system serves more than 800 contributing law enforcement and other state offices in Pennsylvania and includes more than 250 capture locations, more than 2.5 million arrest records, and 38,000 web retrieval users sharing data records and mug shot images across the state's WAN.

JFRS enables Pennsylvania's criminal justice professionals to verify or discover identity matches through one-to-one or one-to-many searches in a database sized for 3.5 million criminal booking images. So far, the JFRS identity searches have aided investigators in solving numerous cases, including homicides, robberies, burglaries, fraud and identity theft.

JFRS also includes the PA Watchlist functionality that enables users in the field to add suspect images from bank cameras, ATMs, retail security cameras and other sources to the watch list, enhancing the opportunity for additional identifications.

According to Harry Giordano, Special Projects manager for JNET, successes have occurred during the JNET System Training Sessions, which are currently taking place at Computer Training Labs across the commonwealth. "Officers coming to the JNET Training Sessions are asked to bring photos of unknown suspects from open cases and, using the system for the first time during training, are getting HITS and solving crimes," said Mr. Giordano. "Thanks to DataWorks Plus' intuitive Graphical User Interface and accuracy of the core facial recognition technology even first-time users are able to get positive results."

Over 39,000 municipal, county, state and federal justice professionals use JNET to access critical information and securely conduct investigations. JNET provides role-based access to over 35 distinct applications. In addition, JNET uses a service oriented architecture (SOA) model to broker the exchange of over 600 million messages annually between business partners. The JNET infrastructure connects all 67 Pennsylvania counties, 38 state agencies, and 37 federal law enforcement agencies.

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iv.) Research Articles:

http://www.wired.co.uk/article/facial-recognition-systems-can-identify-you-even-if-your-face-is-blurred

https://www.wired.com/2016/09/machine-learning-can-identify-pixelated-faces-researchers-show/

"The researchers said only 10 fully-visible examples of a person's face were needed to identify a blurred image with 91.5 per cent accuracy. With an average of just 1.25 tagged images, the system could still correctly identify an individual 56.8 per cent of the time, which is 73 times higher than chance would allow.

It fared worse in "across event" measurements - those in which the lighting, clothing and context had changed - but still performed at 17 times the rate of chance, identifying people in 31.9 per cent of obscured images.

The researchers also tested different obfuscation methods to see if there was variance in the identification performance. By attempting to recognise non-tagged Gaussian blurs, white boxes and black box images they found that the best method for staying anonymous is to post all your pictures to Facebook with a black box over your face and shoulders. The next safest would be blocking it out with a white box, then a Gaussian blur. "

Jacob

Chief, this week doesn't work?

Jacob

On Tue, May 1, 2018 at 12:06 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> Chief, does sometime next week work?
>
> Jacob
>
> On Wed, Apr 18, 2018 at 5:02 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>> Chief,
>>
>> I'm international next week.
>>
>> Do you have time to meet week after next? If not, the week after?
>>
>> Hope all is well!
>>
>> Jacob
>>
>>
>>
>> On Wed, Apr 11, 2018 at 11:47 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>>> At least a few times a year.
>>>
>>>
>>> *Chief Michael E. Botieri*
>>>
>>> Plymouth Police Department
>>>
>>> 20 Long Pond Road
>>>
>>> Plymouth, MA 02360
>>>
>>> 508-830-4218 X 226
>>>
>>> chiefbotieri@plymouthpolice.com
>>>
>>>
>>> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
>>> **Sent:** Wednesday, April 11, 2018 7:19 AM
>>> **To:** Michael Botieri
>>>
>>> **Subject:** Re: Initial Search Follow Up Note
>>>
>>>
>>> how often? few times per year?
>>>
>>>
>>> On Wed, Apr 11, 2018 at 7:13 AM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>>>> Look at videos and maybe be the officers or detectives recognize the guy.
>>>>
>>>> On Apr 11, 2018, at 7:01 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>>>> Mike, thank you. How often? What do u do now to appease the calls? Not much you can do?
>>>>>
>>>>> Jacob
>>>>>
>>>>> On Wednesday, April 11, 2018, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>>>>> Jacob,
>>>>>
>>>>> We definitely get these type of calls. I'm headed in now. I'll talk with the guys and get back to you with a date.

Thanks

Mike

Keep up the great work.

On Apr 10, 2018, at 6:45 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief, check this out. Do you think your department could collaborate on below cases? Would it make sense for a hospital to call you ever?

https://americansecuritytoday.com/nypd-wants-licenses-facial-recognition-learn-multi-video/

"Besides the obvious benefit of identifying suspects in active investigations, this could:

Assist lost dementia patients.

· Such a system could identify lost adults with cognitive disorders like Alzheimer's, who might not know who they are or where they came from.

· One example: *Wall Street Journal* points out that this would have been useful in the case of a Staten Island woman with Alzheimer's who police found in 2014, and who could only be identified thanks to a minor traffic violation.

Identify the unidentified in hospitals.

· Facial recognition could help hospitals put names to unconscious patients who come in without ID, as well as John/Jane Doe cases.

· Connecting these individuals with their families could save them a lot of agony in wondering what happened/is happening to loved ones.

On Tue, Dec 12, 2017 at 12:20 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Will do – Hope all is well with too.

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Tuesday, December 12, 2017 12:18 PM

To: Michael Botieri
Cc: Ryan Ruggiero
Subject: Re: Initial Search Follow Up Note

Chief let's meet soon! Hope all is well.

On Tue, Dec 12, 2017 at 12:09 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

That sounds like it would be a great value for the evidence room.

Mike

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff

Sent: Tuesday, December 12, 2017 11:44 AM
To: Michael Botieri
Cc: Ryan Ruggiero

Subject: Re: Initial Search Follow Up Note

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Jacob

Chief Botieri,

We're excited to work with you.

I've attached our initial proposal for consideration.

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Can you discuss this proposal sometime later this week or next? You and Lafayette have a similar proposal and we are hoping we can launch with you guys both ASAP. :)

Best Regards,
Jacob

Chief,

You have a chance to do a first review?

Can we chat on phone sometime briefly later this week? What works well for you?

Best,
Jacob

On Tue, May 15, 2018 at 5:11 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
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> Jacob

Chief,

Can we possibly chat on phone this week? Hope to launch with you guys this summer!

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Jacob

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>>
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>> Best Regards,
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Great. Looking forward!

On Mon, May 28, 2018 at 2:06 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Jacob – I will definitely give you a call – I was out at training all last week.
>
> Mike
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
>
> 508-830-4218 X 226
>
> chiefbotieri@plymouthpolice.com
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Monday, May 21, 2018 4:46 PM
> **To:** Michael Botieri
> **Cc:** Ryan Ruggiero; Antonio Gomes
> **Subject:** Re: Suspect Technologies Initial Proposal
>
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try now? this work?

On Fri, Jun 1, 2018 at 4:18 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> No attachment
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
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>
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>
> Best Regards,
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Chief, you look at this, at all? Any thoughts?

Jacob

On Fri, Jun 1, 2018 at 4:39 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Got it - thanks
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
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Chief, that's great. So if we moved forward, all you would have to do is put it in the yearly budget? Is that correct? Or would we have more hurdles than that?

Jacob

On Mon, Jun 11, 2018 at 12:53 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> Jacob – I think it seems very fair – I just don't have the money budgeted for it.
>
> Mike
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
>
> 508-830-4218 X 226
>
> chiefbotieri@plymouthpolice.com
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Thursday, June 07, 2018 2:56 PM
>
> **To:** Michael Botieri
> **Subject:** Re: Suspect Technologies Initial Proposal
>
> Chief, you look at this, at all? Any thoughts?
>
> Jacob
>
> On Fri, Jun 1, 2018 at 4:39 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>
> Got it - thanks
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
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>
> chiefbotieri@plymouthpolice.com
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Friday, June 01, 2018 4:21 PM
> **To:** Michael Botieri
> **Subject:** Re: Suspect Technologies Initial Proposal
>
> try now? this work?

On Fri, Jun 1, 2018 at 4:18 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

No attachment

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, June 01, 2018 4:12 PM
To: Michael Botieri
Subject: Re: Suspect Technologies Initial Proposal

On Tue, May 15, 2018 at 5:11 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Chief Botieri,

We're excited to work with you.

I've attached our initial proposal for consideration.

As we work toward deployment, we do need to figure out remote login access if we move forward with on-prem. We will also def. need reliable internet for the system for the pilot + initial stages.

Can you discuss this proposal sometime later this week or next? You and Lafayette have a similar proposal and we are hoping we can launch with you guys both ASAP. :)

Best Regards,

Jacob

Chief, that sounds good. I want to get rolling on some proof of concepts in the mean-time.

You talk to Ryan or Antonio at all? Any updates?

On Mon, Jun 11, 2018 at 5:03 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

> I wouldn't be able to get it in the upcoming FY19 budget. I would be requesting for next July 1st, 2019
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
>
> Plymouth, MA 02360
>
> 508-830-4218 X 226
>
> chiefbotieri@plymouthpolice.com
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Monday, June 11, 2018 3:17 PM
>
> **To:** Michael Botieri
> **Subject:** Re: Suspect Technologies Initial Proposal
>
>
> Chief, that's great. So if we moved forward, all you would have to do is put it in the yearly budget? Is that correct? Or would we have more hurdles than that?
>
>
> Jacob
>
>
> On Mon, Jun 11, 2018 at 12:53 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:
>
> Jacob – I think it seems very fair – I just don't have the money budgeted for it.
>
>
> Mike
>
>
>
> *Chief Michael E. Botieri*
>
> Plymouth Police Department
>
> 20 Long Pond Road
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> Plymouth, MA 02360
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> **To:** Michael Botieri
> **Subject:** Re: Suspect Technologies Initial Proposal

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Jacob

On Fri, Jun 1, 2018 at 4:39 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

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Chief Michael E. Botieri

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Plymouth, MA 02360

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chiefbotieri@plymouthpolice.com

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Sent: Friday, June 01, 2018 4:21 PM
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Subject: Re: Suspect Technologies Initial Proposal

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No attachment

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To: Michael Botieri
Subject: Re: Suspect Technologies Initial Proposal

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I've attached our initial proposal for consideration.

As we work toward deployment, we do need to figure out remote login access if we move forward with on-prem. We will also def. need reliable internet for the system for the pilot + initial stages.

Can you discuss this proposal sometime later this week or next? You and Lafayette have a similar proposal and we are hoping we can launch with you guys both ASAP. :)

Best Regards,

Jacob

Chief here's the Irma chain; start from the top and let me know if anything doesn't make sense.

---------- Forwarded message ----------
From: **Jacob Sniff** <jsniff@alumni.princeton.edu>
Date: Sun, Jun 17, 2018 at 11:07 AM
Subject: Re: Sex Offenders, Those With Warrants Not Welcome at Hurricane Shelters
To: "Patrick J. Flannelly" <pjflannelly@lafayette.in.gov>
Cc: jacob@suspecttech.com

Seems NAACP was also chiming in:

https://www.usatoday.com/story/news/2017/09/08/fla-naacp-asks-officials-workers-not-check-warrants-hurricane-shelters/648205001/

Also check out this stern response:

https://www.thedailybeast.com/florida-sheriff-warns-fugitives-theyll-be-jailed-if-they-seek-shelter

""While we are checking, if we see someone with an active warrant we have to place them under arrest," she added. **She didn't seem persuaded by the criticism that this would discourage people from showing up in the first place. "That is a risk a person would run," Horstman said.** "I think it is much safer to be in our jail than to expose yourself to a Category 5 storm. You are using the phrase, 'people who are scared to go to jail.' If you have a warrant, legally you should be in jail. You should turn yourself in and be safe in our jail rather than risk your life waiting out a storm."
"

It does seem that some inmates had a bad experience in Katrina though:

https://kdvr.com/2017/09/07/florida-sheriff-those-with-active-warrants-seeking-shelter-from-hurricane-irma-will-go-to-jail/

"According to Human Rights Watch, 600 inmates in the Orleans Parish Prison compound were trapped in chest-deep water for four days before they were rescued from the flooded city."

Pat, maybe we could deploy the tech at homeless shelters for quick check? Seems everyone form DeBlasio and NYPD and Massachusetts are dealing with this. I wonder how homeless shelters check identities to begin with; I imagine most don't have id's. Do people fingerprint now? Could facial be quicker and more effective?

1. http://www.nydailynews.com/new-york/sharp-increase-risk-posing-sex-offenders-living-ny-shelters-article-1.3496587

The number of registered sex offenders in homeless shelters for families has doubled in the last three years despite the city's promise to end these potentially dangerous placements, a report released Thursday charged.

On Sun, Jun 17, 2018 at 10:54 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

> Sheriff Judd says he stands by his statements. "If you show up at a shelter, we're going to shelter you safely, but it's going to be in the county jail because we have a legal obligation to execute the warrant," Sheriff Judd told FOX 13.
>
> The sheriff says that his tweets give all offenders fair warning, four or five days in advance, so those with warrants still have time to take care of their infractions and then go to a shelter if they choose to, or make other arrangements.
>
> Sexual predators and offenders, however, are never welcome at shelters, he said, and which is something they are told when they are placed on the sex offender registry.
>
>
> On Sun, Jun 17, 2018 at 10:45 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>> Pat,
>>
>> What would Ed Davis think of this?
>>
>> http://insider.foxnews.com/2017/09/07/hurricane-irma-florida-sheriff-grady-judd-no-sex-offenders-active-warrants-shelters

Seems the sheriff during Hurricane Irma wouldn't allow sexual offenders and others with warrants to go to shelters.

Relatedly, I wonder if facial rec could have been more efficient processing for him when checking ID's at the shelters generally and looking for those with open warrants.

Also, look at the ACLU response at 2:35 and see the sheriff's response.

Jacob

Hey Guys,

You guys both around thurs or fri. next week? What works?

Best Regards,
Jacob

ok thank you!

On Thu, Jul 19, 2018 at 3:23 PM, Antonio Gomes <ltgomes@plymouthpolice.com> wrote:

> Wait for Chief. Today is wake for Weymouth Officer and tomorrow is the funeral
>
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Thursday, July 19, 2018 2:58 PM
> **To:** Antonio Gomes; Michael Botieri
> **Subject:** Meet End of Next Week?
>
>
> Hey Guys,
>
>
> You guys both around thurs or fri. next week? What works?
>
>
>
> Best Regards,
>
> Jacob

Chief/Antonio,

You guys want to try connecting in person next week?

Best Regards,
Jacob

On Thu, Jul 19, 2018 at 2:58 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

> Hey Guys,
>
> You guys both around thurs or fri. next week? What works?
>
>
> Best Regards,
> Jacob

How does it look guys?

Jacob

Chief, any update?

Best,
Jacob

On Thu, Aug 9, 2018 at 11:58 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> How does it look guys?
>
> Jacob

Guys, good news? Bad news?

Jacob

On Tue, Aug 21, 2018 at 9:25 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> Chief, any update?
>
> Best,
> Jacob
>
> On Thu, Aug 9, 2018 at 11:58 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>> How does it look guys?
>>
>> Jacob

ok grt!

On Fri, Aug 24, 2018 at 10:27 AM, Ryan Ruggiero <Ruggiero@plymouthpolice.com> wrote:
> We reached out to the Fusion center and the Captain we need to speak with is on vacation. Hopefully we will hear back next week.
>
> On Aug 24, 2018, at 8:15 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>
>> Guys, good news? Bad news?
>>
>> Jacob
>>
>> On Tue, Aug 21, 2018 at 9:25 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>> Chief, any update?
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>>> Jacob
>>>
>>> On Thu, Aug 9, 2018 at 11:58 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>>> How does it look guys?
>>>>
>>>> Jacob

guys any news this week?

On Fri, Aug 24, 2018 at 11:02 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> ok grt!
>
> On Fri, Aug 24, 2018 at 10:27 AM, Ryan Ruggiero <Ruggiero@plymouthpolice.com> wrote:
>> We reached out to the Fusion center and the Captain we need to speak with is on vacation. Hopefully we will hear back next week.
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>>>> Chief, any update?
>>>>
>>>> Best,
>>>> Jacob
>>>>
>>>> On Thu, Aug 9, 2018 at 11:58 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>>>> How does it look guys?
>>>>>
>>>>> Jacob

Ryan hope all is well. Any update over there? You hear back?

Jacob

On Fri, Aug 31, 2018 at 9:09 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
> guys any news this week?
>
> On Fri, Aug 24, 2018 at 11:02 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>> ok grt!
>>
>> On Fri, Aug 24, 2018 at 10:27 AM, Ryan Ruggiero <Ruggiero@plymouthpolice.com> wrote:
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>>>> Chief, any update?
>>>>
>>>> Best,
>>>> Jacob
>>>>
>>>> On Thu, Aug 9, 2018 at 11:58 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>>>> How does it look guys?
>>>>>
>>>>> Jacob

Ryan, they get back to you? Any news?

On Mon, Sep 17, 2018 at 7:24 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
Ryan hope all is well. Any update over there? You hear back?

Jacob

On Fri, Aug 31, 2018 at 9:09 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
guys any news this week?

On Fri, Aug 24, 2018 at 11:02 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
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Guys, good news? Bad news?

Jacob

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Chief, any update?

Best,
Jacob

On Thu, Aug 9, 2018 at 11:58 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
How does it look guys?

Jacob

thanks for the update Ryan.

On Mon, Sep 24, 2018 at 2:30 PM, Ryan Ruggiero <Ruggiero@plymouthpolice.com> wrote:

> Jacob,
>
> I have not heard back from Coplink. Voicemails and emails have been sent with to response.
>
> **From:** jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
> **Sent:** Monday, September 17, 2018 7:25 AM
> **To:** Ryan Ruggiero <Ruggiero@plymouthpolice.com>; Michael Botieri <chiefbotieri@plymouthpolice.com>
> **Subject:** Re: coplink
>
> Ryan hope all is well. Any update over there? You hear back?
>
> Jacob
>
> On Fri, Aug 31, 2018 at 9:09 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
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>>>> We reached out to the Fusion center and the Captain we need to speak with is on vacation. Hopefully we will hear back next week.
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>>>>>> Chief, any update?
>>>>>>
>>>>>> Best,
>>>>>> Jacob
>>>>>>
>>>>>> On Thu, Aug 9, 2018 at 11:58 AM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
>>>>>>
>>>>>>> How does it look guys?
>>>>>>>
>>>>>>> Jacob

Ed, we are all going to be at IACP; if you are going, maybe we could all meet up sometime there?

Best,
Jacob

On Sun, Apr 29, 2018 at 7:41 AM Ed Davis <edavis@eddavisllc.com> wrote:
Well done finding this opportunityJacob. If you need assistance with the state or schools, please let me know.

Sent from my iPhone

On Apr 28, 2018, at 9:12 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:

Guys, seems at least Wisconsin schools maybe a good initial market:

MADISON - Wisconsin Attorney General Brad Schimel said the state will use **$30 million in grants** to ensure that by fall all Wisconsin schools are using a single secure entrance and other basic safeguards.

https://www.jsonline.com/story/news/politics/2018/04/25/wisconsin-spend-30-million-secure-entrances-all-state-schools-september-attorney-gschools-using-secu/549718002/

"The first category of grants will focus on basic safety steps such as making sure all classroom doors have locks and school entrances have glass that can resist shattering after being shot.

Schimel said he wanted schools to have **one locked entrance monitored by staff** rather than multiple entryways through which outsiders could come and go at will. Schools could also seek grants for alarms that would sound when someone from inside the school propped open an emergency exit."

On Wed, Apr 18, 2018 at 7:20 PM, Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
These are all good thoughts. Thank you Ed and everyone. I want to move forward. However, I do think, after Ed's comments, we should discuss this in more detail. I think we should iron out Ed's comment: " I am a community policing advocate, so I believe that this type of screening, in a place that we want everyone to feel free to access for help is not advisable".

1. For example, I was just reading about this person in Tennessee today and they had their own political attack it seems in that state going after schools and other places:

http://www.guns.com/2018/04/18/tennessee-veteran-sues-state-to-share-facial-recognition-software-without-a-license/

Apparently, he has similar ideas as us and apparently the alert mechanism, requires him to obtain an onerous license, which could take 5 years to obtain:

"when it ordered he obtain a license to install alarm systems before donating his software to a local synagogue. "

"While the board itself allegedly copped to the software's security potential, officials said Jackson's product inhabits a "gray area" within the industry and told him to obtain proper licensing before distributing it — anywhere. The process, however, could require Jackson spend five years installing security alarms as an apprentice. "

2. FB for example has a class action law-suit in the news just yesterday for photo-identification:

https://techcrunch.com/2018/04/16/judge-says-class-action-suit-against-facebook-over-facial-recognition-can-go-forward/

I wonder if we'll ever face similar issues as 1 or 2 above). The timing couldn't be better for us to give this a go.

Jacob

On Sat, Apr 14, 2018 at 9:49 AM, Ed Davis <edavis@eddavisllc.com> wrote:
Good morning Gentlemen,

It is great to meet you and to be a part of this fascinating discussion. My apologies for getting back to you so late. My week was crazy and for a thoughtful response I had to wait until Saturday to secure the necessary time.

Fist, I agree that this technology is vital and is the future of law enforcement. I also know that if I tried to implement this system in Boston I would be run out of town by the liberal activists and privacy zealots, to say nothing of the Boston Globe and their advocacy for undocumented imigrants However, and thankfully, each community is different. I think that each police chief needs to make the call for their community. I am a community policing advocate, so I believe that this type of screening, in a place that we want everyone to feel free to access for help is not advisable. For you Jacob, the key is to ensure you are comfortable in each installation, as a focused political attack is a potential existential threat to your new business.

This technology needs a real life experiment and Jacob is lucky to have two police leaders who are interested in working with him. Good data from a successful deployment will establish a base line for purchasing decisions. The proposal to use police lobbies against the warrant database will clearly get you the most data in the fastest time. The devil is in a defensible outcome from the positive identifications. For instance, many arrests for low level violations of the law could be viewed poorly by the public. However, if arrests were focused only on felony offenses or sex offenders, no one could credibly protest. The key is to do this experiment with as little controversy as possible.

When I think about options for deployment and, after Parkland, that the nation is clamoring for a method to secure schools, this is an attractive option. Other potential locations are national sporting events, some federal facilities, the federal reserve system and others.

I hope this lengthy response establishes my point and is helpful to the big picture.

Sincerely,
Ed

On Fri, Apr 13, 2018 at 5:44 PM Jacob Sniff <jsniff@alumni.princeton.edu> wrote:
Guys,

One other related item I thought of.

I went to a presentation in DC last month and I heard surprisingly that only '18% of tdsb (Terrorist Screening Database) has at least one biometric', with facial being the large portion by far.

Pat, do you have a set of people on file with warrants that you don't have a matching photo of them? Maybe our service could also include this---we find a photo of anyone who doesn't have one on file, by searching the web or elsewhere. And also some age progression of current people on file, so it's not outdated ever.

Apparently for most people on the national watchlist, we don't even have a photo of them.

Best,
Jacob

On Fri, Apr 13, 2018 at 4:18 PM, Michael Botieri <chiefbotieri@plymouthpolice.com> wrote:

Jacob,

Most of those are warrant arrests. I do not think the False Positive is a big problem at this point.

Mike

Chief Michael E. Botieri

Plymouth Police Department

20 Long Pond Road

Plymouth, MA 02360

508-830-4218 X 226

chiefbotieri@plymouthpolice.com

From: jsniff12@gmail.com [mailto:jsniff12@gmail.com] **On Behalf Of** Jacob Sniff
Sent: Friday, April 13, 2018 7:19 AM
To: Patrick J. Flannelly; Ed Davis; Michael Botieri
Subject: Re: Facial Lobby Comments + Opinions

Pat,

That is really good info. Few follow-ups for everyone:

i.) So right now, you arrest 4 to 8 people a month in your lobby. Are they just arrested normally by the officer; with handcuffs? Wow, I would never have guessed it would have been so high. Is it mostly low level stuff now? Person arrested and then freed? Are they verbally charged and then handcuffed?

ii.) We'll definitely be way higher than 60 to 70 percent, so no worries there. With a true positive of 95%+ at these volumes, mainly wondering if the false positive is fine and if missing people so of the time is ok. Again I think the #'s are pretty good here. 1 false positive every couple of week or once a month of course maybe higher than the status quo. The good thing is all they'll have to do is visually look at the match with the video feed snippet; and then decide whether to take action. So FP is pretty harmless I think.

Chief Botieri what do you think about everything?

Jacob

On Thu, Apr 12, 2018 at 3:01 PM, Patrick J. Flannelly <pjflannelly@lafayette.in.gov> wrote:

Jacob,

A few quick responses in red below.

Patrick J. Flannelly

Chief of Police

Lafayette Police Department

20 N. 6th St.

Lafayette, IN 47901

(765) 807-1210 (Office)

(765) 479-4445 (Mobile)

pjflannelly@lafayette.in.gov

www.lafayettepolice.us

From: jsniff12@gmail.com <jsniff12@gmail.com> **On Behalf Of** Jacob Sniff
Sent: Wednesday, April 11, 2018 12:23 PM
To: Ed Davis <edavis@eddavisllc.com>; Michael Botieri <chiefbotieri@plymouthpolice.com>; Patrick J. Flannelly <pjflannelly@lafayette.in.gov>
Subject: Facial Lobby Comments + Opinions

Ed Davis/Chief Mike Botieri, and Chief Pat Flannelly,

I've been discussing multiple uses of facial rec. with each of you. Ed, Pat is the Chief from Lafayette I mentioned. Mike, is the one from Plymouth in MA. Mike/Pat, I don't think you know each other either, but I believe I mentioned both of you to the other in

past discussions; take this as the introduction :)

Right now, it seems the most interesting use case is facial rec. alerts from lobby cameras. I wanted to write a note, to solicit some comments and opinions on a few matters related to this:

1. To define what we mean, we are planning to move forward with the facial scanning in lobbies. More or less, the facial application will integrate and use existing cameras to scan everyone's face who enters a lobby, and compare to a local list of people that have open warrants (usually 5-10% of any town). It will have different categories of warrants and the officers will take different actions, based on the different categories. We will send any visual alerts back to the dispatchers/officers in the lobby to review and decide whether to take action on.

2. Ed, you mentioned that if we did the lobby idea in Boston, that they would go absolutely nuts and it would be a privacy disaster. Our discussion last week was that police departments are supposed to be welcoming and this would ultimately deter people from showing up.

I wonder everyone's thoughts. Pat and Mike are very open to it and think it has several benefits for their mid-sized agencies. At Pat's agency, you can see a quote from him below why it makes perfect sense:

"Our officers, as a matter of officer safety, will runs warrant check as one of the first thing they do when speaking with people who come to the PD.

This technology would just automate that process, and in fact, it would likely make it safer because the officer would know who the person is before engaging with them.

"Yes, officers will ask for ID and then use their mobile radio to request a warrant check from dispatch. They may not do this for every person they come into contact with, but as a rule, it will be a majority. This is a common practice. If the names are known in advance of an officer arriving, our dispatchers will run the (local) warrant check in advance of the contact. This is why having facial recognition on Body Camera's is another interesting feature. I would say this is not a matter of "if," but will be a matter of routine protocol automated by AI.

"

In speaking with our Chief Records Technician, she estimates that we, on average, will make 4 to 8 arrest per month in our lobby. These arrests include those that are coming to turn themselves in, but of these numbers, most of them are just unaware that they have a warrant. She estimates that we would probably double this number using facial recognition, but that might be a bit high in my opinion. These warrants would not traffic warrants where a person has never been arrested before because we would not have a photograph on file.

These numbers would be much higher if we still pre-screened after hours subjects for admittance into our homeless shelter. This is something that most agencies probably would not deal with, we just did this for a few years after having some violent battery cases occur in one of our shelters when subjects were admitted after hours. We began a program where subjects were required to get a pass from our Records Division for admittance if they were not pre-screened. This led to a lot of arrest, mostly low level alcohol/drug related cases.

3. What does everyone think a minimum success would be? Like 1 suspect per year? That would at least justify it? What are your thoughts? Pat as your offices manually check now, how often have they historically caught someone with a warrant?

If we were to maintain our current numbers, maybe with a slight increase, I certainly feel this would justify the expense. Automating the process just reduces the likelihood of error and could help improve customer service overall (unless you are one of the people that enters the lobby with a warrant on file).

4. There will of course be some false positive and also missed suspects. I wonder what everyone thinks is acceptable. I think our

true positive will be 95% accurate at 1 false positive per month. 98% accurate at 1 false positive a week for below volume. To be clear, what makes the statistics clearly work is we err on the side of caution, i.e. we would rather not generate a match unless we're pretty sure there's a match:

Here are some #'s below:

-1k ppl per day

-50 percent hit rate = 500 people per day (raw detection)

-500*1000 = 500,000 match attempts (watch-list size of 1000)

-0.0000001*500,000 = ~1 false match per 20 days (FAR of .00001 percent)

Lafayette lobby statistics:

"But if you had to just pull a number out it's probably close to a thousand people a day are in the lobby for service. It's also one of the main entrances for employees so you will see maybe 30 of us walking thru and going straight in to the doorway and not interacting with the counter multiple times a day.

The population in the county is about 185k people with about 70k in city limits and we have a few that don't follow the law. There's 1350 warrants for just LPD and some of those are multiple for the same person so backing out duplicates there are 1250 people that are wanted just by us."

There is a verification process that officers will undertake before taking anyone into custody on a warrant, so we would view this technology only as lead information and would not arrest based on a "potential match" identified with facial recognition technology solely. I think a true positive rate of 95% is sufficient grounds to initiate a non-consensual stop to investigate further. That might take some vetting in the courts, but I think probably anything above 60 to 70% would be grounds for a Terry Stop. Again, good policy will be need to be in place in advance.

5. Pat, had the below opinion, when discussing the identification and then containment issues. Does everyone agree? Any opinions? Additional Thoughts?

"Well, I would say identifying the person and then knowing what to do with them are two different issues. The issue with Airports is that many people are just passing through and are nowhere near their originating jurisdiction. It would be very costly for airport police to arrest everyone wanted on a warrant, even if the originating jurisdiction has placed an Extradition hold on them, because they would be responsible for securing and maintaining the person until that happens, which can take up to weeks. Airports would likely just need to focus, in a way in which you have identified, a tiered approach to make a workflow decision in advance of the problem that would allow them to actually accomplish their mission.

This is not the same as in a mall or local jurisdiction as the population is going to be local. We would want to arrest all of them, or almost all of them, in an effort to clear out their case. A tiered approach is still applicable, just not as critical."

6. Are there potentially other markets where the tech makes more sense for now? Ed, you thought schools would be more tractable. It's interesting, I think Ed had exactly the opposite opinion of Pat, that police lobbies are good and schools are hard. I think I agree with Pat for now, dominate law enforcement and expand to other places.

I have spoken with two of our area school superintendents since we began this conversation. Both are interested in learning more about the potential safety benefits and seem open to a pilot project. So, I guess I am changing my tune a little bit there. Again, I think a lot depends on how this technology is going to be used and that is communicated well in advance. If we start making truancy arrest or disciplining students for things captured by facial recognition that do not amount to priority safety measures it might become problematic.

Thoughts? Comments? Opinions?

Best,

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Hey Guys,

Can we meet sometime next week or week after?

Does either Friday work sometime?

Best Regards,
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Antonio,

Thank you for your feedback; it seems none of those organizations will be helpful to us now or in near future.

I wanted to update you on our plans:

> i.)   We launch one platform that has video conversion, redaction, video tagging, and frame by frame video review by Jan 1st

> ii.)   We then add recognition within 30 days historically, assuming there aren't any modifications to the video review platform above

I look forward to working with you guys!

Best Regards,
Jacob

On Fri, Dec 7, 2018 at 1:57 PM Antonio Gomes <ltgomes@plymouthpolice.com> wrote:

> I spoke with the State Police Fusion Center today in regards to connecting with their facial recognition software. These are the answers to our questions:
>
> · A private vendor is not allowed to access the facial recognition database through the Fusion Center. (It has been requested before).
>
> · The Fusion Center's software cannot perform the integration of systems.
>
> · The Mass. RMV locks the software down. Jacob would have to go directly to the RMV for permission, however, others have tried that as well without success. Evidently the RMV is very protective of its database.
>
> · The Fusion Center does not have an RMV source phone number to contact directly.
>
> Det. Lt. Antonio Gomes
>
> Plymouth Police Dept.
>
> 20 Long Pond Road
>
> Plymouth, Ma 02360
>
> 508-830-4218 x236
>
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>
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Guys, look forward to working together. Check out our press release just today:

https://xconomy.com/boston/2018/12/12/mark-cuban-facial-recognition-startup-suspect-technoligies/

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Ryan/Antonio,

We are working on launching the video conversion piece too.

Is there a common list of file types that you struggle with converting ? We have built our rule engine and I just want to make sure we aren't missing a large set of files we haven't seen. If there are any sample files, that's even better.

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Ryan, we are in traffic. 10:30 is better start time.

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I would hate to run into a situation where:

-we can only convert a small portion of your files
-of the files we can convert, many aren't good enough quality for recognition

I do want to set expectations reasonably; we may only have success with less than 50 percent of files, but hopefully that's still a huge help. I look forward to working with you guys! Our team will also agree to try to manually convert any files that we don't have success with our program upon launch.

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http://40.87.49.81/
username: jsniff12@gmail.com
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2. I've attached a simple 1 pg user manual.

3. Some sample videos to try:

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