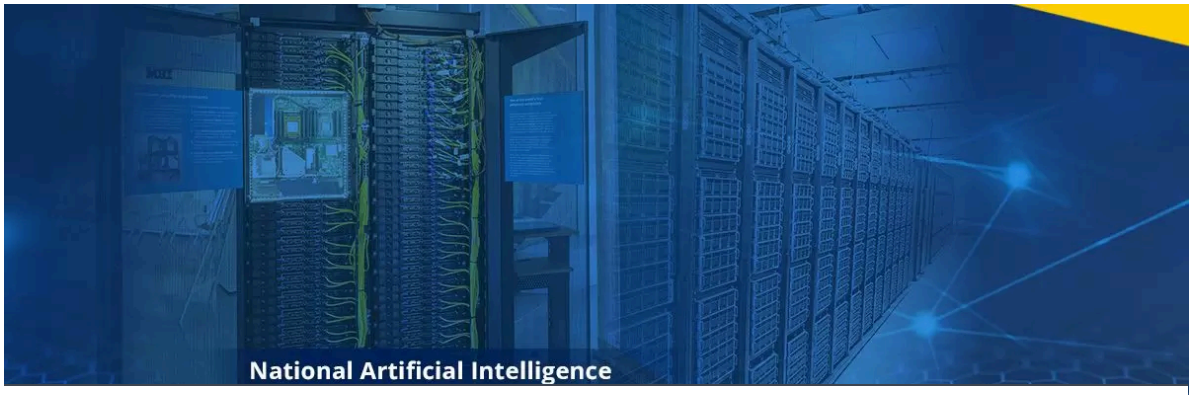

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NSF News

Democratizing the future of AI R&D: NSF to launch National AI Research Resource pilot

January 24, 2024

Alexandria, Virginia: Today, the U.S. National Science Foundation and collaborating agencies launched the National Artificial Intelligence Research Resource (NAIRR) pilot, a first step towards realizing the vision for a shared research infrastructure that will strengthen and

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democratize access to critical resources necessary to power responsible AI discovery and innovation.

Partnering with 10 other federal agencies as well as 25 private sector, nonprofit and philanthropic organizations, the NAIRR pilot will provide access to advanced computing, datasets, models, software, training and user support to U.S.-based researchers and educators. By connecting researchers and educators with the resources needed to support their work, the NAIRR pilot will power innovative AI research and, as it continues to grow, inform the design of the full NAIRR ecosystem. This pilot is a proof of concept to ignite the level of investment needed to realize the full NAIRR vision.

"The breadth of partners that have come together for this pilot underscores the urgency of developing a National AI Research Resource for the future of AI in America," said NSF Director Sethuraman Panchanathan. "By investing in AI research through the NAIRR pilot, the United States unleashes discovery and impact and bolsters its global competitiveness. To continue leading in AI research and development, we must create opportunities across the country to advance AI innovation and strengthen educational opportunities, empowering the nation to shape international standards and igniting economic growth. NSF is proud to lead this effort with our current and future partners."

"Today's announcement makes progress on President Biden's goal to advance responsible AI

NSF congratulates recipients of the prestigious National Medal of Science and National Medal of Technology and Innovation awards

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so that everyone in America can benefit from this powerful technology. The National AI Research Resource pilot will give researchers access to critical data and compute, catalyzing action to achieve America's great aspirations," said Arati Prabhakar, Assistant to the President for Science and Technology and Director of the White House Office of Science and Technology.

The collaborative nature of the pilot, bringing together academia, industry, nonprofit and government sectors, is intended to promote cross-sector partnerships. Industry collaboration can lead to the development of commercially viable AI applications and solutions, fostering economic growth by creating new markets and revenue streams.

Current government partners include:

- U.S. National Science Foundation (NSF)
- Defense Advanced Research Projects Agency (DARPA)
- National Aeronautics and Space Administration (NASA)
- National Institutes of Health (NIH)
- National Institute of Standards and Technology (NIST)
- National Oceanic and Atmospheric Administration (NOAA)
- U.S. Department of Agriculture (USDA)
- U.S. Department of Defense (DOD)
- U.S. Department of Energy (DOE)

- U.S. Department of Veterans Affairs (VA)
- U.S. Patent and Trademark Office (USPTO)

Current private sector, non-profit and philanthropy partners include:

• AI2: Allen Institute for Artificial Intelligence • Amazon Web Services (AWS) • Anthropic • AMD • Cerebras • Databricks • Datavant • EleutherAI • Google • Hewlett Packard Enterprise (HPE) • Hugging Face • IBM	• Intel • Meta • Microsoft • MLCommons • NVIDIA • Omidyar Network • OpenAI • OpenMined • Palantir • Regenstrief Institute • SambaNova Systems • Vocareum • Weights & Biases

The NAIRR pilot will initially support AI research to advance safe, secure and trustworthy AI, as well as the application of AI to challenges in healthcare and environmental and infrastructure

sustainability. The pilot will also provide infrastructure support to educators to enable training on AI technologies and their responsible approaches.

The pilot's operations will be organized into four focus areas:

- **NAIRR Open** will enable open AI research through access to diverse AI resources via the NAIRR Pilot Portal and coordinated allocations.
- **NAIRR Secure**, co-led by NIH and DOE, will enable AI research requiring privacy and security-preserving resources and will assemble exemplar privacy preserving resources.
- **NAIRR Software** will facilitate and investigate inter-operable use of AI software, platforms, tools and services for NAIRR pilot resources.
- **NAIRR Classroom** will reach new communities through education, training, user support and outreach.

The launch meets a goal outlined in Executive Order 14110, signed by President Joe Biden in October 2023, directing NSF to launch a pilot for NAIRR within 90 days. As the pilot expedites the proof of concept, future investments in NAIRR will democratize access to AI innovation and support critical work advancing the development of trustworthy AI.

Researchers can discover and apply for initial access to NAIRR pilot resources through the NAIRR pilot portal at nairrpilot.org. A second, broader call for proposals from the research community will be released in spring 2024, providing a mechanism for researchers to apply for access to the full suite of NAIRR pilot resources contributed by pilot partners.

The NAIRR pilot welcomes additional private sector and nonprofit partners. Those interested are encouraged to reach out to NSF at nairr_pilot@nsf.gov.

Quotes from NAIRR pilot partners:

Allen Institute for AI (AI2)

"The advancement of trustworthy AI demands a truly open approach and cross-sector collaboration at a scale we've never seen before. Today's launch of the NAIRR pilot is a massive step forward in achieving just that. At AI2, we believe that true open access is required to build a scientific approach to AI, which is critical for developing AI that we can understand and trust. That's why we introduced AI2 Dolma, one of the world's largest open datasets last year, and will soon introduce an open large language model OLMo. We look forward to making our AI research available for the NAIRR pilot to enable open AI research alongside our NAIRR partners." — *Ali Farhadi, CEO of AI2.*

Amazon Web Services (AWS)

"AWS is honored to support the launch of the National AI Research Resource pilot program. As one of the world's leading developers and deployers of AI tools and services, we support the safe, secure and responsible development of AI technology. We are committed to supporting the U.S. National Science Foundation, as well as collaborating agencies, educators, and research communities, as they mobilize support for AI research." — *Kim Majerus, Vice President of Global Education and U.S. State and Local Government, Amazon Web Services.*

AMD

“In anticipation of the profound impact of AI in fields such as research, healthcare and security, AMD is proud to partner with the NAIRR task force, supplying hardware, software, and expertise to enhance research. We are committed to supporting AI-driven scientific breakthroughs, believing in their potential to deliver global benefits.” — *Victor Peng, President, AMD.*

Anthropic

"The NAIRR pilot will play a critical role in the development of trustworthy AI. We are excited to lend our experience as an AI safety and research company to this extensive cross-sector partnership and help democratize access to AI innovation." — *Jack Clark, co-founder and Head of Policy, Anthropic.*

Cerebras

"The Cerebras team is thrilled to support the NAIRR pilot to help build a national AI research infrastructure that will expand access to world-class AI compute and radically accelerate scientific AI research – program goals that are central to our company's mission, as well. By contributing access to exaFLOPs of AI supercomputing power and support from our expert ML/AI engineering teams, we aim to help pilot users accelerate and scale their work, enable NAIRR success and meaningfully advance our nation's leadership in AI computing and research." — *Andy Hock, Senior Vice President of Product and Strategy, Cerebras.*

DARPA

"National security applications of AI will require high levels of trust and proficiency. By providing the NAIRR pilot datasets cultivated through DARPA programs, we aim to accelerate research in critical areas of interest to the Department of Defense, such as AI theory, AI engineering and human-AI teaming." — *Kathleen Fisher, Information Innovation Office Director, DARPA.*

Databricks

“Databricks has always been committed to blue-sky research and open source innovation — it’s part of our culture and stems from our company's academic roots. We’re the original creators of MLflow, one of the most popular open source AI tools, and now we’re carrying on that legacy with Mosaic AI. We hope that by contributing our Data Intelligence Platform to NAIRR, we will enable the next generation of students to create new

breakthroughs and build new businesses in AI." — *Jonathan Frankle, Chief Scientist, Databricks.*

Datavant

"We at Datavant are excited for the opportunity to use our privacy-enhancing technology, expertise and datasets to support NAIRR Secure and NAIRR Software. As part of NAIRR Secure, Datavant will help the NIH NCATS National Clinical Cohort Collaborative and the NIH NIBIB Medical Imaging & Data Resource Center connect their multi-modal decentralized data in a privacy-preserving manner to formulate accurate, representative, longitudinal health records." — *Vera Mucaj, Chief Scientific Officer; GM, Public Sector, Datavant, Inc.*

EleutherAI

"In today's research landscape, broadening access to large scale computing resources and high-performance computing expertise is essential for advancing AI/ML research and equalizing opportunities across U.S. academic institutions. The NAIRR is an essential investment in academic AI/ML research in the United States, and EleutherAI is thrilled to be partnering with the NSF to promote access to these technologies and share our expertise at training large scale generative AI models." — *Stella Biderman, Executive Director, EleutherAI*.

Google

"Realizing AI's promise will require a wide range of talents to research, build and deploy AI in ways that solve society's biggest challenges. The NAIRR

pilot is a critical step in broadening the AI research community, fostering public-private collaboration and accelerating AI innovation. We're excited to partner with NAIRR and contribute Google's cutting-edge tools, compute and datasets to this important initiative." — *Kent Walker, President, Global Affairs, Google & Alphabet.*

Hewlett Packard Enterprise (HPE)

"AI is a powerful and transformative technology that has the potential to solve societal challenges and accelerate technological innovation, which is why it's imperative to examine best practices in advancing artificial intelligence in a responsible manner. Hewlett Packard Enterprise is honored to work with NAIRR in this important public-private alliance that will guide the future of AI innovation, research and investment." — *Andrew Wheeler, HPE Fellow and Vice President, Hewlett Packard Labs.*

Hugging Face

"Public research on AI is necessary to ensure the technology works for all its stakeholders. NAIRR will be essential in enabling research in this direction; we're happy to support this effort through contributed resources and by leveraging our experience as a platform for open and collaborative development of AI systems." — *Yacine Jernite, ML and Society Lead, Hugging Face.*

IBM

"IBM strongly supports the creation and funding of the National AI Research Resource and its mission of bringing together computing power,

data, resources, people and expertise to advance leading-edge AI research in the U.S. The NAIRR will broaden affordable access to the computational power and datasets necessary to develop and evaluate AI systems and tools, and it will accelerate the scientific research necessary to help the U.S. stay globally competitive in AI. This is why IBM has also endorsed the bipartisan 'CREATE AI Act' to authorize the construction of the NAIRR and advocated for its full funding." — *Darío Gil, IBM Senior Vice President and Director of Research.*

Intel

“Intel Team is excited to support the launch of NSF’s NAIRR (National AI Research Resource) pilot program. The pilot program is a critical step in driving usage of HW & SW with AI Technologies. Intel is looking forward to sharing deep technical knowledge on the usage of Intel platforms (CPU, GPU, accelerators, and other ecosystem ingredients), software tools, and optimization support which are critical for NAIRR initiatives.” – *Steve Orrin, Intel Federal CTO.*

Meta

“Making sure researchers have open access to cutting edge AI technology is crucial to ensuring AI is developed responsibly. Meta has pioneered open AI innovation for more than a decade, which is why we’re enthusiastic supporters of the NAIRR initiative.” – *Nick Clegg, President, Global Affairs*.

Microsoft

"We're excited to support the National AI Research Resource pilot, a pivotal step in broadening AI research access," said Eric Horvitz, Chief Scientific Officer of Microsoft. "This initiative aligns with our commitment to democratize AI research and spur innovation. We're enthusiastic about contributing to the pilot and look forward to sharing learnings that inform the full-scale NAIRR, as envisioned for the post-pilot era."— *Eric Horvitz, Chief Scientific Officer, Microsoft.*

NASA

NASA is expanding efforts to further artificial intelligence innovations and emerging technology to best serve our missions, from sifting through Earth science imagery, to searching for planets outside our solar system using our deep space telescopes, and more. We look forward to partnering with other departments and agencies on this important endeavor." – *Dave Draper, Deputy Chief Scientist, NASA Headquarters in Washington.*

NIH

"NIH is pleased to partner on this important proof-of-concept pilot harnessing AI technology to advance research and improve health. It will be critical to ensure the ethical adoption of this technology so that all people, regardless of income or zip code, reap the benefits and do not suffer harms." — *Monica Bertagnolli, Director, NIH.*

NOAA

"At NOAA, we are committed to advancing AI research and development in the weather, water and climate enterprise to enhance our mission. We look forward to collaborating with key partners across government, industry, non-profit and academic sectors to address resource gaps in the AI community through the NAIRR pilot program." — *Michael Morgan, NOAA Assistant Secretary of Commerce for Environmental Observation and Prediction.*

NVIDIA

"AI is increasingly defining our era, and its potential can best be fulfilled with broad access to its transformative capabilities. With NVIDIA AI software and supercomputing, the scientists, researchers and engineers of the extended NSF community will be able to utilize the world's leading infrastructure to fuel a new generation of innovation." — *Jensen Huang, founder and CEO, NVIDIA.*

Omidyar Network

"Omidyar Network is proud to partner with the U.S. National Science Foundation in The NAIRR pilot. To bend the course of generative AI toward large-scale benefits to society, the NAIRR pilot will democratize access to compute, data, models, expertise and training. This will help ensure more inclusive, meaningful participation among researchers who are committed to building responsible generative AI." — *Mike Kubzansky, CEO, Omidyar Network.*

OpenAI

"We at OpenAI are immensely excited to be a part of the NAIRR pilot. This pivotal step towards democratizing AI research resources aligns with our commitment to advancing the field of artificial intelligence in a way that is inclusive and beneficial for all. By providing broader access to essential tools and data, we are opening doors for a diverse range of talents and ideas, furthering innovation and ensuring that AI development continues to be a force for the greater good." — *Anna Makanju, Vice President of Global Affairs, OpenAI.*

OpenMined

"In the 1960s, the U.S. government stepped in to create the ARPANET, democratizing access to the largest supercomputers in the country, because only a limited set of researchers had access to them. Now, the U.S. government steps in to create the NAIRR, democratizing access to the largest AI resources in the country, including the largest AI supercomputers, because only a limited set of researchers have access to them. And upon the promise of the NAIRR, the future of AI will be democratic, American innovation will flourish, and we're honored to be a part of it." — *Andrew Trask, Executive Director of OpenMined*.

Palantir

"Palantir is proud to collaborate with the U.S. National Science Foundation and its partners to launch the National AI Research Resource pilot. Since May 2020, Palantir has supported the National Clinical Cohort Collaborative (N3C), a

program that has created unprecedented acceleration in large-scale healthcare research and upon which this new pilot will expand its critical mission to ensure the full and diverse talent of researchers from across the country have access to top-tier AI systems. Bringing AI-driven tools to government and academia offers the opportunity to improve health outcomes by increasing the speed they will be able to access information and surface new insights." — *Hirsh Jain, Head of Public Health, Federal, Palantir.*

Regenstrief Institute

"Future healthcare-focused AI innovation is anchored in the ethical sourcing of real-world data and the synergy between a diverse consortium of institutions, researchers, medical professionals, and both public and private stakeholders. We're pleased to be part of this pilot project, and we hope that the work that follows will not only expedite the deployment of useful AI innovations into public health and clinical decision-making processes but also enrich our understanding of individual patient needs and the strategies to fulfill them." — *Shaun Grannis, Vice President of Data and Analytics, Regenstrief Institute.*

SambaNova Systems

"The NAIRR pilot collaboration between NSF, White House Office of Science and Technology Policy and SambaNova Systems will bring broad access to AI resources and enhance U.S. competitiveness. Together, we are unlocking the potential for diverse researchers to drive

innovation, ensuring that the benefits of AI are accessible to all." — *Jennifer Glore, Vice President of Public Sector, SambaNova Systems.*

DOE

"From creating new AI tools to manage an increasingly complex energy grid to accelerating discovery in targeted treatments for cancer, the U.S. Department of Energy and its 17 national laboratories have played a leading role in the development and use of AI for decades. We are pleased to co-lead NAIRR Secure and contribute advanced AI testbeds and expand access to one of the world's fastest supercomputers through the extension of Summit. Researchers across the country will be able to advance safe and trustworthy AI through an AI-enabled supercomputer with built-in enhanced privacy and security protections. This resource will help unlock advancements in responsible AI — such as new diagnoses, advanced materials and technologies of the future —while also minimizing the risks." — *Geri Richmond, Under Secretary for Science & Innovation, DOE.*

USDA

"USDA's National Agricultural Statistics Service is proud to partner with the U.S. National Science Foundation in offering the Census of Agriculture dataset to the NAIRR ecosystem. The Census of Agriculture is USDA’s largest data collection effort and captures a comprehensive picture of the value, diversity, and trends of American agriculture. We are excited to see what NAIRR

researchers will discover by using these valuable data." — *Hubert Hamer, NASS Administrator, USDA.*

USPTO

"The USPTO is committed to advancing U.S. innovation including AI innovation and AI-assisted innovation. We are focused on maximizing AI's benefits and distributing them broadly across society, confining the risks through technical mitigations and human governance and empowering a diversity of individuals and organizations to participate in AI innovation." — *Kathi Vidal, Under Secretary of Commerce for Intellectual Property and Director, USPTO.*

VA

“Through NAIRR and NSF leadership, we can ensure the U.S. remains an AI R&D leader in the international community, enabling cooperation, sharing trustworthy AI best practices and helping government agencies learn from one another.” – *Dr. Gil Alterovitz, Director of Artificial Intelligence at the Department of Veterans Affairs.*

Vocareum

"Vocareum's mission is to close the global digital skills gap by delivering virtual learning labs and cloud resources to instructors and learners for cloud, data and AI education. We are immensely proud and enthusiastic to contribute as a key participant in this essential, collaborative initiative." — *Sanjay Srivastav, founder and CEO, Vocareum*.

Weights & Biases

"As the United States prioritizes the research and deployment of safe, secure and trustworthy AI, Weights & Biases is honored to join this collaborative effort. By mobilizing academia, industry, nonprofit and government sectors, we believe this pilot program will shape and move the country's AI vision forward." — *Chris Van Pelt, co-founder, Weights & Biases*.

Learn more about the NAIRR and the NAIRR pilot

Research areas

Office of the Director (OD)