

National

Science

Foundation

No-Cost Computing Resources for Researchers and Educators

Purushotham V. Bangalore, Ph.D.

Program Director

Office of Advanced Cyberinfrastructure

Directorate for Computer and Information Science and Engineering

U.S. National Science Foundation

MS-CC Workshop: Campus Technology, Cybersecurity, & Research Computing Support – October 29-30, 2024



Available Resources

CLASSROOM AND EDUCATOR RESOURCES

Request access to educational platforms (such as Juypter notebooks).

Apply

RESEARCHER RESOURCES

Request access to advanced computing, cloud computing, models, software, platforms, and collaborations.

Apply

DATA, MODELS, AND MORE

Additional government and government-funded resources that do not require an application.

View

NAIRR Pilot Computational resources available





Frontera – UT Austin



Delta + DeltaAl – U. Of Illinois



Jetstream 2 – Indiana U



Anvil - Purdue



Expanse+Voyager UCSD **CloudBank**





ACES - Texas A&M University



NAIRR Pilot



Al Testbed – Argonne NL

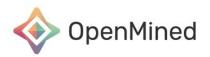


Summit - Oak Ridge National Lab

Beyond compute towards services and collaborations























ANTHROP\C



Example of an NSF funded research project piloting an inference service (Not integrated into NAIRR pilot at this time)

National Deep Inference Fabric

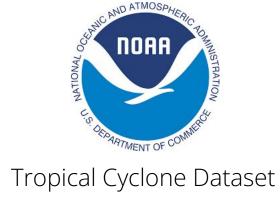
A transparent research computing fabric to allow scientists to *probe and alter internals of* trillion-parameter Al models:



Several agency datasets are available through the pilot











Lake Michigan Substrate Prediction Dataset



US Census of Agriculture

Note: NAIRR Steering subcommittee on Data and Models is working on a process for non-govt datasets to be contributed to the NAIRR Pilot

NAIRR Pilot

Democratizing
Al Through
Access to
Cyber-infrastru
cture

Request NAIRR Pilot Resources to Advance AI Research at: https://nairrpilot.org/opportunities/allocations

Look for news and events and sign up for updates at: https://nairrpilot.org



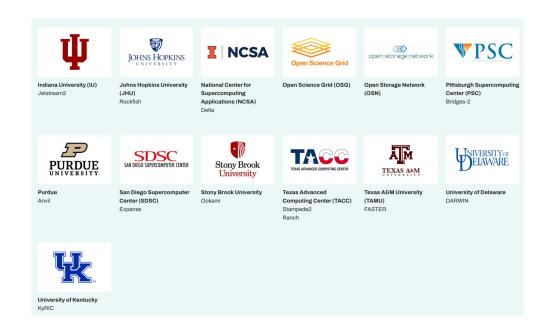
The ACCESS Program Advanced Cyberinfrastructure Coordination Ecosystem Services and Support





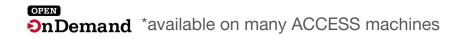
Cyberinfrastructure Available

- Computing systems
 - Varying core counts & memory sizes
 - Cloud resources (persistent services)
- Accelerators
 - GPUs, vector processors, FPGAs
- Data storage systems
 - Archival, object, tiered
- Data repositories
- Software & workflow managers
- High performance networking
- CI Professionals & support tools
- System performance monitoring



Current ACCESS Resource Providers (more to come!)

https://access-ci.org/resource-providers/







Step-by-Step Allocations Request

- Register for an ACCESS ID
- Select the <u>Project Type</u> that best fits your needs
 - If you're new, start with *Explore* and upgrade when you need more resources!
- Complete the Request Form
 - Add co-Pls, Allocation Managers, and other Users (make sure they have an ACCESS ID)
- Exchange your allocated credits for the <u>Available Resources</u>
- Start your research, development, or educational (classroom) work!

Link to full "Get Your First Project" guide





ACCESS vs. NAIRR Pilot

- Long-term research and educational initiatives
- All project types not just Al-related
- Traditional CPU, GPU, storage resources & services
- Most projects requests approved in ~1 business day and accounts available in ~3 business days

- Short-term projects with immediate results
- Al-focused projects that align with the NAIRR Pilot focus areas
- Diverse set of resources including industry partners
- Requests take ~6-8 weeks for review and processing





Questions?

NAIRR Pilot Website: https://nairrpilot.org

ACCESS Website: https://access-ci.org



