

# Research Accelerator Portal For Higher Education

Streamlining & Accelerating Access to HPC & AI/ML Resources On Google Cloud



## LIMITATIONS OF ON-PREMISE HPC SOLUTIONS

Researchers across leading universities and colleges often face several challenges when accessing on-premise high-performance computing resources including long wait times, budgetary constraints, scalability limitations, a lack of expertise in accessing these resources and strict security controls. Overall, on-premise solutions for simulating complex systems, analyzing large data sets and accelerating research are often costly, difficult to maintain and require specialized expertise.

With these challenges in mind, our team at Improving has partnered with Google Cloud to develop the Research Accelerator Portal to assist you and your team in accessing and managing high-performance computing (HPC) clusters on GCP. Our solution will streamline your research, lower your total cost of ownership and help you scale efficiently as your need for HPC resources increases.

Our **Research Accelerator Portal for Higher Education** will:

- Streamline research through easy access to the latest HPC & AI/ML resources
- Scale efficiently as your need for HPC resources increases.
- Lower your total cost of ownership

## ACCESSIBLE HIGH PERFORMANCE COMPUTING

Improving created the Research Accelerator Portal to provide higher education researchers with a solution that streamlined their access to HPC computing resources. This portal offers automated provisioning of secure cloud-based scientific computing environments, as well as project lifecycle management and cost control capabilities. It uses pre-configured project templates to quickly (within an hour after approval) provision AI, ML, and high-performance computing resources for the following applications:

- Analyze large datasets for various data science applications
- Perform geospatial studies for environmental monitoring and urban planning
- Run complex simulations for physics, chemistry, and engineering projects
- Train and deploy machine learning models for a variety of use cases



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## COMPLIANT AND SECURE

The Portal complies with the **ITSG-33 PBMM** security control profile (and can be modified to align with other security profiles and protocols), which includes the application of the least privilege principle to service accounts used for deployment automation, as well as the hardening of Internet-facing endpoints and access control with full support for third-party identity provider services.

To configure and deploy a wide range of scientific computing environments for HPC, AI/ML, and data science applications, the system makes use of cloud-native features such as containerized workloads, serverless functions, asynchronous messaging and Terraform-based parameterized templates.



## THE IMPROVING DIFFERENCE

Our Research Accelerator Portal, which leverages the latest technologies in AI/ML, GenAI, and cloud computing on Google Cloud, has been utilized by researchers and organizations across various research-intensive fields and has provided a range of benefits that include:

- Ability to deploy and operate the Portal in PBMM-compliant cloud environments
- A frictionless workflow to request and configure cloud-based resources
- Managerial approval workflow and visibility on project resource use
- Single-click deployment of pre-configured scientific computing environments
- Project lifecycle management tools, enabling cost-efficient use of cloud resources
- Automated alerts as approved budget spend reaches specific thresholds
- Easy-to-use budget reporting and budget management tools

## BOOK A DEMO OF THE PORTAL!



Ready To See The Research Accelerator Portal In Action?  
[Click To Book Your Demo Today!](#)