Academic Grant Program

Call for Proposals: Robotics and Edge AI

About This Call for Proposals (CFP)

NVIDIA has been transforming computer graphics and accelerated computing for more than 25 years. We're defining the next era of scientific computing and supporting top researchers doing compelling, computationally intense work to solve some of the world's most challenging problems. Developer Programs supports researchers in using our SDKs, frameworks, and web services by providing training and in creating online communities to help researchers do their life's work using NVIDIA technologies.

NVIDIA solicits proposals for innovative work related to robotics, autonomous vehicles, 5G/6G, smart spaces, and federated learning. Projects should incorporate pretrained models from ai.nvidia.com and/or make extensive use of NVIDIA software distributions such as Megatron-Core, Megatron-LM, NeMo™ Framework, NVIDIA Warp, Newton, NVIDIA Cosmos™, Isaac™, JetPack™, DeepStream, Metropolis, TAO, FLARE™, Sionna™, or Aerial™. Proposals should be attached to one of the following themes:

Robotics and Autonomous Vehicles

- Learning and control algorithms, simulation frameworks, data collection tools, and foundation models for humanoid robotics
- Novel end-to-end architectures, efficient high-fidelity sensor simulation, realistic reactive agent behavior modeling, and foundation models for autonomous vehicles
- AI safety, assurances, guardrails, runtime monitoring, anomaly detection, out-of-distribution robustness, and domain generalization
- Diffusion and autoregressive models for synthetic data generation, robot action prediction, and policy evaluation

5G/6G

- Digital twins of communication systems
- CUDA®-accelerated signal processing for wireless communications
- Software-defined radio platforms and testbeds
- Machine learning for the physical layer and above
- Integrated communications, and sensing and multimodal sensing

Smart Spaces

- Intelligent traffic management and safety
- Environmental and infrastructure monitoring
- Applications for real-time situational awareness and human-machine interaction that use generative AI at the edge (e.g., multimodal LLMs, RAG, TTS, ASR, and VLMs)

Federated Learning

- Federated data and foundation model learning techniques
- Efficient communication and learning of LLMs (e.g., compression, pruning, parameter-efficient fine-tuning, asynchronous federated learning)
- Privacy-preserving techniques in the age of LLM (e.g., differential privacy, prevention of memorization, privacy attacks)
- Training with dynamic/real-time/multi-sensor data on the edge (e.g., for automotive, robotics, surgery)
- Collaborative inference with information aggregation (e.g., federated RAG, multi-agents)

Award Details

Selected principal investigators (PIs) may receive up to three resources, choosing a maximum of one option per category:

NVIDIA H100 GPU hours:

- Up to 30,000 H100 80 GB hours or equivalent (max. of 8 concurrent GPUs)

-AND/OR-

NVIDIA RTX PRO 6000 GPUs:

- Up to four NVIDIA RTX PRO™ 6000 Max-Q Workstation Edition GPUs OR
- Up to four NVIDIA RTX PRO 6000 Server Edition GPUs

*Server Edition requests must include detailed information on server availability to host GPUs.

-AND/OR-

Developer Kits:

- Up to two NVIDIA Jetson AGX Orin™ Developer Kits OR
- Up to two NVIDIA Jetson AGX Thor™ Developer Kits (humanoids only) OR
- Up to two NVIDIA DRIVE AGX™ Thor Developer Kits (autonomous vehicles only)

Examples:

- *2 NVIDIA Jetson AGX Thor Developer Kits + 16,000 A100 hours + 2 RTX PRO 6000 Max-Q Workstations*
- *1 NVIDIA Jetson AGX Orin Developer Kit + 4 NVIDIA RTX PRO 6000 Server Edition GPUs*
- *24,000 A100 hours*

Note, proposals may be declined if the requested resource(s) is not aligned with the project workload (e.g., A100 better suited, but RTX™ requested).

Not all projects that meet eligibility requirements will be selected for an award. The final award amount will be determined by the NVIDIA awards panel. GPU hours provided to the PI will expire six months after award; unused GPU hours will be forfeited. Physical hardware will be shipped to the PI.

Applicant Eligibility

Full-time faculty at accredited academic institutions that award research degrees to Ph.D. students are eligible. Postdocs and graduate students must work with a full-time faculty member to submit on their behalf.

Each person can submit one proposal per quarter, a maximum of four proposals annually. For example, one submission is allowed in the first quarter, January–March.

Each individual applicant is eligible to receive one award per calendar year.

Proposal Requirements

Proposals must follow the proposal template and should not exceed four pages, not including appendices.

Expectations of Recipients

Award recipient should make reasonable efforts to acknowledge the support of NVIDIA Corporation and reference how specific hardware and software contributed to project results. Recipients will inform NVIDIA of publications, presentations, open-source code and data releases, and speaking engagements that reference the supported project via the NVIDIA grant portal. Failure to report in the portal will influence future award selection.

Please review NVIDIA Academic Grant Program terms and conditions.