Opportunity Title: Machine Learning and Mathematical Methods in Heliophysics
Opportunity Reference Code: 0197-NPP-MAR26-GSFC-HelioSci

Organization National Aeronautics and Space Administration (NASA)

Reference Code 0197-NPP-MAR26-GSFC-HelioSci

How to Apply All applications must be submitted in Zintellect

Please visit the NASA Postdoctoral Program website for application instructions and requirements: How to Apply | NASA Postdoctoral Program (orau.org)

A complete application to the NASA Postdoctoral Program includes:

1. Research proposal
2. Three letters of recommendation
3. Official doctoral transcript documents

Application Deadline 4/2/2026 6:00:59 PM Eastern Time Zone

Description **About the NASA Postdoctoral Program**

The NASA Postdoctoral Program (NPP) offers unique research opportunities to highly-talented scientists to engage in ongoing NASA research projects at a NASA Center, NASA Headquarters, or at a NASA-affiliated research institute. These one- to three-year fellowships are competitive and are designed to advance NASA's missions in space science, Earth science, aeronautics, space operations, exploration systems, and astrobiology.

Description:

Heliophysics has a vast wealth of data, sampling a wide range of domains, such as the solar interior, corona, heliosphere, magnetosphere, ionosphere, upper atmosphere. There are diverse data sets and models representing many properties (e.g. intensity, magnetic field, current, density, velocity, temperature). These data sets are used to study physical processes and relationships (such as turbulence, waves, shocks, magnetic reconnection) which vary over a wide range of temporal and spatial scales. Because of this, there are many associated challenges facing data science in heliophysics. Modern methods in data science have the potential to access new, exciting results that eluded classical analysis approaches. Machine learning has been shown to improve performance in several elements of space weather forecasting. However, a deep comprehension of machine learning techniques in the context of the heliophysics data environment will open new opportunities for cross-disciplinary sharing and cooperation. More deliberate approaches can help reveal the fundamental physical processes that govern heliophysical systems, and adaptation of methods to specifically target the underlying physics can help turn an improved correlation or forecast into deeper physical insight and understanding.

This opportunity emphasizes the use of machine learning, AI, and advanced mathematical methods to expand the discovery potential of heliophysics mission data, theoretical models, and simulations. Examples

include deep learning, neural networks, data segmentation, high dimensionality, and advanced statistical/probabilistic methods.

Location:
Goddard Space Flight Center
Greenbelt, Maryland

Field of Science: Heliophysics Science

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Applications with citizens from Designated Countries will not be accepted at this time, unless they are Legal Permanent Residents of the United States. A complete list of Designated Countries can be found at: https://www.nasa.gov/oiir/export-control.

Eligibility is currently open to:

- U.S. Citizens;
- U.S. Lawful Permanent Residents (LPR);
- Foreign Nationals eligible for an Exchange Visitor J-1 visa status; and,
- Applicants for LPR, asylees, or refugees in the U.S. at the time of application with 1) a valid EAD card and 2) I-485 or I-589 forms in pending status

Questions about this opportunity? Please email npp@orau.org

Point of Contact Mikeala

Eligibility Requirements

- **Degree:** Doctoral Degree.