Leibniz-Institut für Astrophysik Potsdam

The Leibniz Institute for Astrophysics Potsdam (AIP) is a leading research center, with scientists exploring a diverse range of astrophysical topics from solar physics to cosmology. Core research areas include cosmic magnetic fields and extragalactic astrophysics, underpinned by a robust technology team specializing in spectroscopy, robotics, and e-science. Located in the picturesque Potsdam/Babelsberg area, on the southwestern edge of the Berlin metropolitan region, AIP continues the distinguished tradition of the Astrophysical Observatory Potsdam and the Berlin Observatory (founded in 1700) and employs over 200 staff.

The Supercomputing and E-Science section at AIP invites applications for a pivotal role within its team:

Postdoctoral Researcher Position: LLM-based Agentic Systems for Scientific Workflows (w/m/d)

We are seeking an exceptional researcher with proven expertise in Large Language Models (LLMs), advanced AI systems development, and scientific data management to drive the Physics-LLM project, which is strategically funded by ErUM-Data/BMFTR: Research Data Management.

About the Project

The Physics-LLM project is dedicated to advancing next-generation, LLM-driven agentic systems that will fundamentally transform how scientists interact with complex data, automate intricate workflows, and conduct cutting-edge computational research. Operating within the ErUM-Data framework, the project's mission is to democratize access to sophisticated scientific workflows through intuitive natural language interfaces, thereby enhancing the reproducibility, efficiency, and accessibility of research processes.

As a Postdoctoral Researcher, you will work under the direct supervision of Dr. Arman Khalatyan at the AIP, PI of LLM-based Agentic Systems. This critical work package is structured around three main pillars: core agentic system development, seamless domain knowledge integration, and robust multi-community deployment. Your responsibilities will encompass the design and implementation of core components of the agentic LLM system, with a strong focus on advanced reasoning, memory integration, and autonomous task execution capabilities. You will work on developing, researching and orchestrating sophisticated multi-agent systems to manage complex scientific workflows, integrating specialized domain-specific knowledge bases. The project is a close collaboration between German universities and HPC centers.

Required Qualifications Applicants must hold a PhD (or possess equivalent research experience) in Astrophysics, Physics, Computer Science, Machine Learning, or a closely related field. A strong background or demonstrated interest in artificial intelligence, natural language processing, or data-driven scientific research is essential. Candidates should possess good programming skills, specifically in Python, and be familiar with modern machine learning tools and frameworks.

A solid understanding of scientific data management principles and workflow concepts, coupled with exposure to distributed or cloud-based computing environments, will be highly advantageous. Desired Qualifications Experience with open-source large language model ecosystems such as Hugging Face, Ollama, or vLLM is highly desirable. Additional familiarity with reinforcement learning, autonomous or multi-agent systems, and workflow orchestration platforms such as REANA or Apache Airflow would be a significant asset.

What We Offer

Initial Appointment: 3 years (with potential for extension contingent upon performance and project continuation),
Start Date: Negotiable, ideally early 01.2026
Salary: Competitive remuneration package at the German academic standard level (TV-L E13, depending on qualifications and experience)
Benefits: Comprehensive social benefits package including company pension (VBL), and flexible working arrangements
Work Environment: A highly collaborative, international team environment with access to state-of-the-art research infrastructure
Location: Potsdam, Germany

We particularly value diversity and we encourage applications from women. Preference will be given to applicants with disabilities if they possess equivalent professional qualifications and abilities. For detailed inquiries regarding the position, please contact the hiring team via the following email address:

bewerbung-2025-11@aip.de

Leibniz-Gemeinschaft

TOTAL E-QUALITY