Technische Universität Berlin

Technische Universität Berlin offers an open position:

Research Assistant - 0,75 working time - salary grade E13 TV-L Berliner Hochschulen
under the reserve that funds are granted

Faculty II - Institute of Mathematics / Mathematical Optimization
Reference number: II-287/25 (starting at 01/09/25 / 30/06/2028 / closing date for applications 08/08/25)

Working field:

In the 'EF1 Agentic AI in Mathematics' project, you will research agent-based LLM systems that discover new mathematical structures and conjectures. You will be responsible for the independent planning and execution of extensive numerical experiments as well as the automatic generation and verification of proofs.

Main Tasks:

- Design and implement agent architectures (prompt-engineering, multi-agent coordination, RAG pipelines) for mathematical reasoning
- Conduct benchmark studies in discrete mathematics / combinatorics and document new results
- Integrate formal-verification tools (e.g. Lean) into the agent workflow and publish open-source prototypes
- Collaborate with TU Berlin, ZIB and external partners; present results at international venues
- Co-supervise students working on AI-for-Math topics in connection with the project

Requirements:

- Successfully completed scientific university degree (diploma, master's degree or equivalent) in mathematics, computer science or a related subject
- Proven background in at least one of: machine learning / LLMs, algorithmic discrete mathematics, formal proof systems
- Strong programming skills (Python required; C++ or Lean is a plus)
- Good knowledge of German and/or English required; willingness to acquire the respective missing language skills
- Strong ability to work independently and in a team is desirable
- Experience with multi-agent systems or reinforcement learning is an advantage
- Publications AI-for-Science or theoretical computer science/mathematics are an advantage
- Familiarity with HPC environments and version control (Git) is desirable

Please send your application **with the reference number** and the usual documents (all combined in a single pdf file, max 5 MB) **by email to Beate Nießen (niessen@math.tu-berlin.de). **

By submitting your application via email you consent to having your data electronically processed and saved. Please note that we do not provide a guaranty for the protection of your personal data when submitted as unprotected file. Please find our data protection notice acc. DSGVO (General Data Protection Regulation) at the TU staff department homepage: https://www.abt2-t.tu-berlin.de/menue/themen_a_z/datenschutzerklaerung/ .

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored. The TU Berlin values the diversity of its members and is committed to the goals of equal opportunities. Applications from people of all nationalities and with a migration background are very welcome.

The vacancy is also available on the internet at
https://www.personalabteilung.tu-berlin.de/menue/jobs/

Zertifikat seit 2008
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