

June 13<sup>th</sup>, 2025

The Zuse Institute Berlin (ZIB) is a non-university research institute under public law of the state of Berlin. Within the [Interactive Optimization and Learning \(IOL\)](#) research group, we are offering a position starting on August 1<sup>st</sup>, 2025, for a

## Researcher (f/m/d)

on a full-time basis (39,4 hours per week), limited until July 31<sup>st</sup>, 2027. If the applicant meets the relevant wage requirements and personal qualifications, the salary will be based on remuneration group 13 TV-L of the pay scale for the German public sector.

Our research group develops and implements cutting-edge algorithms in the fields of mathematical optimization and artificial intelligence, with a strong focus on real-world applications. We design innovative algorithmic solutions by leveraging advanced methods from mathematical optimization and machine learning.

### Your tasks

- Design and analysis of tensor decomposition methods based on flip graph structures
- Exploration of new heuristic and ML-guided strategies for improving random-walk-based tensor decomposition
- Application of developed methods to quantum circuit optimization (e.g., T-gate minimization and topology-aware modeling)
- Investigation of symmetry-based search strategies within the solution space of tensor decompositions
- Collaboration with the IOL group at ZIB on interdisciplinary research projects in quantum algorithms and numerical simulation

### Your profile

- Completed academic degree (Master or equivalent) in mathematics, computer science, physics, or a related field
- Experience in numerical linear algebra, tensor decomposition, or combinatorial optimization
- Interest in algorithmic research related to quantum computing
- Strong programming skills, preferably in Python
- Independent, creative, and solution-oriented working style as well as strong communication skills and team spirit
- Proficiency in English and preferably also in German

**We offer** a friendly work environment with flexible work and meeting times, excellent equipment and a challenging professional environment

**as well as**

- an active onboarding process to provide new employees with the skills and knowledge that are important to their success in our institute and their careers,
- a varied, future-oriented and responsible field of activity,
- professional training opportunities and support in professional development,
- an additional pension scheme (VBL),
- 30 days annual leave, flexible working hours (flexitime),
- a salary based on TV-L (collective agreement for the public service of the federal states) in accordance with qualifications and professional experience with annual bonus payment,
- capital allowance of up to € 150 per month, or alternatively a BVG job ticket plus the remaining balance,
- the use of canteens and sports programs of the Freie Universität Berlin (FUB) at reduced rates.

Applicants with disabilities will be given preference if equally qualified. Female applicants are highly encouraged to apply, since women are under-represented in natural sciences and ZIB seeks to increase the proportion of women in this field.

Please send your complete application including curriculum vitae in tabular form with a description of previous research/thesis, list of scientific publications and references by **June 19<sup>th</sup>, 2025** (date of receipt), quoting the **Reference Number IWA 07/25** as **one PDF file** to: [jobs@zib.de](mailto:jobs@zib.de).

For further information about the position, please refer to our website [www.zib.de](http://www.zib.de) or contact Dr. Patrick Gelß ([gelss@zib.de](mailto:gelss@zib.de)).

Our private policy statement regarding application data is available at [www.zib.de/impressum](http://www.zib.de/impressum).

For further job offers please visit our website at [www.zib.de/jobadvertisement](http://www.zib.de/jobadvertisement).