



The Weierstrass Institute for Applied Analysis and Stochastics (WIAS) is an institute of the Forschungsverbund Berlin e.V. (FVB). The FVB comprises seven non-university research institutes in Berlin which are funded by the federal and state governments. The research institutes belong to the Leibniz Association.

WIAS invites applications for a

## **PhD student position (f/m/d)**

(Ref. 24/08)

### **“Optimal Transport and Machine Learning”**

in the Weierstrass Group

### **“Data-driven Optimization and Control”**

(Head: Dr. Jia-Jie Zhu) to be filled at the earliest possible date.

**We are looking for:** candidates motivated in researching principled optimal transport theory, optimization, and machine learning. The concrete methodological components of the Ph.D. project include

- Optimal transport and gradient flows for machine learning and optimization
- Probabilistic machine learning, Bayesian inference, sampling
- Robustness, causal inference, robust learning, robust optimization
- Continuous optimization for machine learning, mirror descent algorithms

The Ph.D. student will closely work with Dr. Jia-Jie Zhu (<https://jj-zhu.github.io/>).

**Wanted:** Candidates with a master’s degree in computer science, statistics, or applied mathematics, with a special focus on rigorous training in machine learning or optimization, preferably in optimal transport for machine learning applications. Those qualifications are demonstrated by high-quality technical reports or publications in relevant venues such as (NeurIPS/ICML/ICLR/AISTATS/AAAI/CoLT/JMLR/TMLR etc.). Candidates with strong applied or industrial experiences in deep learning will also be considered.

#### **What we offer:**

- Close mentorship: the Ph.D. candidate will receive responsible and careful mentorship. We emphasize fostering a healthy mentor-student relationship.
- WIAS Berlin is a premier research institution known for its strength in optimization, optimal control, dynamical systems, and applied mathematics in general. It has hosted flagship conferences in mathematical optimization such as ICCOPT 2019.
- Payment according to the collective agreement for the public service (TVöD Bund) including the usual social benefits (30 vacation days in a 5-day week, company pension plan); subsidy for the company ticket for public transport
- Mobile working
- A certified (Audit berufundfamilie) family-friendly work environment.
- Berlin is one of the most culture-rich and diverse international cities in the world. It offers endless opportunities to enjoy life outside work, while being very affordable compared to other major cities. Neither the job nor living in Berlin requires German language (although WIAS offers free German courses). We highly welcome international applications. Scientifically, Berlin offers a rich landscape with numerous opportunities for research, as well as job prospects in academia and industry.



**Weierstrass Institute for Applied Analysis  
and Stochastics  
Leibniz Institute in Forschungsverbund Berlin e. V.**



Please direct scientific queries to Dr. Jia-Jie Zhu ([zhu@wias-berlin.de](mailto:zhu@wias-berlin.de)).

The position is limited to 3 years. The reduced work schedule is 29,25 hours per week, and the salary is according to the German TVoED Bund scale.

The Institute aims to increase the proportion of women in this field, so applications from women are particularly welcome. Among equally qualified applicants, disabled candidates will be given preference.

Please upload your complete application documents –

- 1-2-page cover letter (including a very brief research statement)
- CV with/and links to your existing projects and works
- Master's thesis (or draft if not yet completed)
- Transcripts of bachelor's and master's study
- contact information of 2-3 references from previous research projects who have agreed to be contacted (not needed for the initial application)

via our [applicant portal](#) using the button "[Apply online](#)".

**The advertisement is open with immediate effect and will remain open until the position will be filled.**

**We are looking forward to your application!**