

The Chair of Information Systems Research at the University of Freiburg (Prof. Dr. Dirk Neumann) has an open PhD position “Machine Learning in Operations Research” starting at January 1, 2026

Candidates (m/f/d) should be interested in one (or more) of the following methods/areas:

- Machine learning / artificial intelligence
- Reinforcement learning / dynamic programming
- Optimization / operations research
- Simulation-based optimization and stochastic modeling
- Explainable AI and interpretable machine learning for decision support
- Data-driven decision-making under uncertainty

The candidate is expected to develop novel methods based on machine learning / reinforcement learning to solve optimization problems from operations research. The underlying idea is to “predict” the solutions of combinatorial optimization problems that are proven to be NP-hard. However, this requires deep theoretical considerations about the problem structure and an appropriate transformation from the problem formulation (e.g., integer programming) to a machine learning problem.

The Chair of Information Systems Research aims to extend its strong record of high-level publications in A+ and A journals within the operations research literature. Previous colleagues have taken prestigious academic positions at University of Oxford, ETH Zurich, LMU Munich, Erasmus University Rotterdam, Münster, Würzburg, Vienna, as well as in industry after completing their PhD. For an overview of our research and recent publications, please see: <https://www.is.uni-freiburg.de/>.

The position (100%, TVL-E13) also includes teaching and supervision of Bachelor and Master students. The initial fixed-term contract starts January 1, 2026 or as early as possible in 2026.

We focus on candidates with a technical and/or quantitative background, such as Computer Science, Mathematics, Physics, or Economics/Business Administration with a strong analytical orientation. Candidates should be eager to solve analytical tasks, ideally combined with intermediate programming skills (e.g., C++, Python).

Interested candidates are asked to send a CV with recent grades to dirk.neumann@is.uni-freiburg.de. Please do not hesitate to contact the chair at the above address in case of questions. Further information can also be found on our website: <https://www.is.uni-freiburg.de>.

The Chair of Information Systems Research is looking forward to promising applications.

The University of Freiburg is pursuing a gender equality policy. We would therefore particularly encourage qualified women to apply. If qualified, handicapped applicants will be preferred.