

2 PostDoc or PhD positions in machine learning for precision oncology

The Biomedical Network Science Lab (BIONETS Lab, <https://bionets.tf.fau.de>) at the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU, <https://fau.eu>) and the Department of Pediatrics and Adolescent Medicine at the University Hospital Erlangen (UKER, <https://www.uk-erlangen.de/en/>) offer 2 postdoctoral or doctoral researcher positions at the intersection of graph-based machine learning, precision oncology, and federated learning.

Position information

Using real-world data from actual patients (>50 million laboratory test results from >500,000 patients), you will design, implement, and validate (graph-based) machine learning models for diagnosis and prognosis in pediatric oncology. Moreover, you will develop federated counterparts of the machine learning models to enable privacy-preserving model training on decentrally available data. You will work on a highly interdisciplinary project and will continuously collaborate with bioinformaticians, clinical oncologists, and industrial software developers.

Research environment

The BIONETS Lab is part of the new Department Artificial Intelligence in Biomedical Engineering at FAU (AIBE, <https://aibe.tf.fau.de>), which was established as a cornerstone of the health node of the Bavarian High-Tech Agenda. Research at the BIONETS Lab focuses on the development of algorithms and ML models for systems biology, while UKER's Department of Pediatrics and Adolescent Medicine has strong expertise in the large-scale quantitative analysis of multi-centre laboratory test result data in pediatric oncology (e.g., the PEDREF study, <https://www.pedref.org/>).

Requirements

All candidates should demonstrate strong research passion, scientific curiosity, and a highly independent work style. Candidates applying for a PhD position should have a Master's degree in computer science, bioinformatics, applied mathematics, or a related field with above-average grades. Candidates applying for a postdoctoral researcher position should additionally have a PhD in one of these fields and an excellent publication record. Proficiency in both written and spoken English and strong programming skills are essential. Additional desirable qualifications include knowledge or experience in one or several of the following fields:

- Machine learning / deep learning
- Graph-based algorithms and machine learning models
- Federated learning
- Biomedical data science

Position details and application instructions

Positions can start as soon as possible. Funding is available through **TV-L E13 positions (100 % with a duration of 2 years)**. Extension may be possible, depending on availability of funding. Candidates should apply with a motivation letter (max. 1 page), an academic CV, a list of publications (especially relevant for PostDoc candidates), the contact details of preferably three researchers who agreed to provide letters of reference, and a transcript of record of their Master's degree. Please combine these documents in a single PDF and send them to Prof. Dr. David B. Blumenthal (david.b.blumenthal@fau.de) and to PD Dr. Jakob Zierk (jakob.zierk@uk-erlangen.de) in a single email with the subject "<your surname> application FLabNet". Applications will be accepted until the positions are filled.