The International Doctorate Program M³OCCA funded by the Elite Network of the Bavarian State Ministry of Science and The Arts invites applications for a

doctoral candidate position (Entgelt-/Bes.Gr. TV-L E13, 100%, 4 years)

at the Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) in Erlangen, Germany. The position will **start 1 June 2026** (fixed start date).

The candidate will develop and deploy deep learning techniques that enhance the robustness and adaptability of glacier surface and bedrock detection in radargrams. The research will focus on advancing continual learning and foundation model approaches to address the challenges of glacier monitoring in diverse and evolving environments. Continual learning will be explored to enable models to incrementally learn from new radar data without forgetting previously acquired knowledge, ensuring long-term model performance under changing conditions. Foundation models will be adapted to handle the variability of radar systems, sensor configurations, and geographic regions, supporting robust generalization across different glacier environments.

The goal of the PhD project is to develop models that can efficiently adapt to new data and environments with minimal retraining effort, contributing to the next generation of scalable and transferable AI tools for cryospheric research.

Required qualifications:

- Master's degree (MSc) in Computer Science, Applied Mathematics, Data Science, Artificial Intelligence, or a related field
- Solid understanding of machine learning and deep learning fundamentals
- Experience with deep learning workflows (e.g., model training, evaluation, data preprocessing)
- Strong programming skills and experience with relevant frameworks (Python, PyTorch)
- Good scientific writing, reporting, and presentation skills
- Excellent command of written and spoken English
- Motivation to publish research results and contribute to open-source projects
- Ability to work independently, critically assess own results, and collaborate effectively within an interdisciplinary research team

Desired and advantageous qualifications:

- Interest in glaciers, geospatial data, or environmental applications of deep learning
- Experience with large-scale data handling and high-performance computing environments
- Demonstrated ability for independent, structured, and diligent research work

The position is part of the coordinated international doctorate program M³OCCA (9 core funded and up to 11 associated doctoral researchers). The active participation and interaction in the joint research seminars, workshops and annual research retreats is mandatory.

Proficiency in German is advantageous but not required, as the working language is English. However, we strongly recommend to learn German for daily life (funds for German language classes are available).

The candidate will be placed at the FAU Pattern Recognition Lab, which offers a vivid working environment.

The Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU) is seeking to augment the number of women in research and teaching and specifically addresses female scientists to apply for this position. We further encourage persons with disabilities to apply. If desired, a member of the equal opportunity office of FAU can participate in the selection process without any disadvantage for the applicant.

For your application, please send a single PDF to idp-mocca@fau.de stating “MOCCA SP 1.3” as subject. The PDF should comprise:

- Cover letter (stating your background and motivation for this project)
- CV, list of publications (if any)
- University degree certificates
- Transcript of records, other certificates (if any)
- Two addresses for potential reference (if any)
- A short research concept how you would approach the topic (max. 2 pages)

Deadline for application: **7 December 2025**, the position is open until filled.

Further information on the sub-project:

Dr.-Ing. Vincent Christlein, Pattern Recognition Lab, FAU, phone: +49-(0)9131-85-27823, e-mail: vincent.christlein@fau.de