

The Chair of Digital Health at FAU Erlangen-Nürnberg invites applications for a

### **Doctoral Researcher – Digital twins for neuromodulation**

Full time research position starting as soon as possible, remuneration according to TV-L E13 Bavaria regulations

#### **Qualifications:**

- Master's Degree in Physics, Mathematics, Electrical Engineering, Biomedical Engineering or related
- Experience in one or more: Mathematical Modeling for Physics and/or Engineering, Computational Neuroscience, 3D CAD, Image-Based Reconstruction, Machine Learning
- Proficiency in Python, Matlab, C++
- Good written and verbal skills in English

#### **Project Description:**

Neuromodulation technologies have made dramatic advances in the last few decades, relieving a plethora of disorders. However, the definition of clinically meaningful neurostimulation strategies is challenging due to the growing number of clinical applications, the increasing complexity of the corresponding technologies and vast inter-subject variability of physiological parameters in humans. Digital twins are natural candidates to optimize and personalize neurotechnologies for clinical use. In this project the successful candidate is asked to develop a framework for the rapid elaboration of personalizable computational models of the nervous system. The successful student will be asked to develop and integrate image-based reconstruction technologies to automatically generate digital twins of individual subjects. The successful student will consolidate mathematical models of neural substrates and multi-physics modeling into this framework to test, enhance and personalize the efficacy of existing neuromodulation technologies and explore novel applications.

#### **Application**

FAU is a member of the Best Practice Club 'Family and University' and promotes equal opportunities. Female candidates are specifically encouraged to apply. The position is open to start immediately or at a negotiated date.

Please send your application including cover letter (max. 1 page), plus full CV and transcripts, as one PDF document via e-mail (see contact information below).

Please note that the candidate evaluation involves one or more scientific-technical presentations and interview appointments to be held via teleconferencing. Applications sent via e-mail will be confirmed within a week. Furthermore, please note that applications not complying with the above requirements may neither be confirmed nor considered.

#### **Contact**

If you have questions regarding this position offer, please contact:

[Dr. Andreas Rowald](#)

[Chair of Digital Health](#)

✉ [andreas.rowald@fau.de](mailto:andreas.rowald@fau.de)