Postdoctoral Researcher (f/m/d)
"Computational analysis of electrogram genesis under consideration of cardiac microstructure using high performance computing"

Job description:

We seek a Postdoctoral Researcher within the European High Performance Computing project *MICROCARD* (www.microcard.eu). MICROCARD develops an exascale application platform for cardiac electrophysiology simulations that is usable for cell-by-cell simulations. The platform will be co-designed by HPC experts, numerical scientists, biomedical engineers, and biomedical scientists. You will investigate the effect of microscopic tissue structure on clinical electrograms using novel model formulations and numerical methods developed in the consortium. Conclusions drawn from this study can help to pinpoint cardiac substrate characteristic for individual patients based on measured electrograms and therefore allow an improved assessment of vulnerability to arrhythmias and suggest optimal tailored ablation strategies.

Applying the novel computational schemes to this use case will provide valuable feedback to the numerics experts in the consortium in a closed feedback loop. Moreover, you will contribute to advancing the openCARP simulation software as well as a user-friendly software ecosystem and user community around it.

Karlsruhe Institute of Technology (KIT) – The Research University in the Helmholtz Association creates und imparts knowledge for the society and the environment. It is our goal to make significant contributions to mastering the global challenges of mankind in the fields of energy, mobility, and information. For this, over 9000 employees of KIT cooperate in a broad range of disciplines in re-search, academic education, and innovation.

Qualification:

You are an open and ambitious team player motivated to strive for creative solutions? We provide a cooperative and communication-oriented environment in the Computational Cardiac Modeling Group at the Institute of Biomedical Engineering. You successfully completed a PhD in biomedical engineering, computational science, applied mathematics, or similar with a publication track record (including software and data) and are motivated to pursue a postdoc? You have experience in numerical simulations or software engineering (C++ or web technologies), care about your work and are motivated to work in a multidisciplinary team, have good communication skills and are highly proficient in written English?

Ideally, you have experience in some of the following areas: modeling of cardiac electrophysiology, meshing, numerical linear algebra, high performance computing, PETSc, software design, DevOps, Continuous Integration, Software Deployment, angular, Flask, ZeroMQ, software containers.

Salary:	The remuneration occurs on the basis of the wage agreement of the civil service in TV-L E13.
Institute:	Institute of Biomedical Engineering (IBT)
Contract duration:	Until end of September 2024
Starting date:	July 2022
Application up to:	March 15, 2022
Contact person in line-management:	Dr. Axel Loewe, axel.loewe@kit.edu, +4972160842790
Application:	Application can be submitted at **Karlsruhe Institute of Technology (KIT) preferably via email until March 15, 2022** to axel.loewe@kit.edu with the following documents:

- Cover letter (What's your motivation for this position? Maximum 2 pages)
- CV
- Certificates
- Thesis/Theses

We prefer to balance the number of employees (f/m/d). Therefore, we kindly ask female applicants to apply for this job.

Recognized severely disabled persons will be preferred if they are equally qualified.

KIT is certified as a family-friendly university (familienfreundliche Hochschule) and offers part-time employment, leaves for family-related reasons, dual career options, and individual coaching for family-work balance.

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Technologie
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