



## RESEARCH ASSISTANT

The project "AI and Simulation for Tumor Liver Assessment (ATLAS)" was funded within the framework of the BMBF call "Computational Life Sciences - AI Methods for Systems Medicine". This is a cooperative project with partners from the fields of computational biomechanics, systems biology, analytical computing, and medicine. For the field of computational biomechanics, we have a position as a PhD research assistant with the possibility to do a PhD.

Applications (female/male/diverse) are invited for this exciting 3-year fully-funded research position at the Institute of Structural Mechanics and Dynamics at the University of Stuttgart, Germany.

The position is initially limited to a period of 3 years. An extension to complete the PhD is possible within the time limits of the Wissenschaftszeitvertragsgesetz (WissZeitVG).

### **What you can expect:**

- Development of a data-driven approach to integrate experimental and clinical data into a finite element method (FEM) simulation
- Development of surrogate models using machine learning (ML) methods
- Collaboration in the development of a continuum-biomechanical model for the mathematical description of deformation-perfusion-function relationships in the human liver
- Integration of the models into a system for clinical decision support in tumor diagnosis and treatment
- Interdisciplinary work with scientists from different research areas (engineering, natural sciences, medicine)
- Participation in national and international conferences to promote professional exchange
- Participation in teaching (helping with lectures and seminars, independent conducting of exercises as well as participation in examination matters)
- Supervision of students, including bachelor's/master's theses
- Possibility to do a PhD

### **What we expect:**

- Completed university studies (diploma or master) in the field of engineering, preferably in aerospace, civil engineering, mechanical engineering, mathematics, physics, technomathematics, computational mechanics, computational engineering, or comparable
- Excellent knowledge of machine learning
- Good knowledge of continuum mechanics
- Programming experience
- Experience in the following areas: FEM, material theory, homogenization, multi-scale modeling, biomechanics, process simulation
- Teamwork and interdisciplinary mindset
- Confident appearance, good presentation style
- Very good German and good English skills, both written and spoken

**Pay scale of the position:** A 100% TV-L 13 position

Please e-mail your complete application documents including CV, certificates, list of grades (master and bachelor) to:

Prof. Dr.-Ing. Tim Ricken  
Institute of Structural Mechanics and Dynamics  
Faculty of Aerospace Engineering and Geodesy  
University of Stuttgart  
Pfaffenwaldring 27  
70569 Stuttgart  
Germany  
office@isd.uni-stuttgart.de

Please send your application by e-mail in a pdf file containing cover letter, curriculum vitae, certificates and, if applicable, further documents. If this is not possible for you, you can also send us your application in paper form. Please note that we unfortunately cannot return application documents. Therefore, please do not submit any original documents, as we will destroy the application documents in accordance with data protection regulations once the procedure has been completed.

The University of Stuttgart would like to increase the proportion of women in the academic field and is therefore particularly interested in applications from women. Severely disabled persons will be given priority if equally qualified. As a certified family-friendly university, we support the compatibility of work and family, and of professional and private life in general. We have an employee health management system that offers our employees a wide range of continuing education programs. Our Welcome Center helps international scientists getting started in Stuttgart.

For preliminary information please contact  
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