**University of Stuttgart**
Germany

Do you want to work in the field of biomechanics and biorobotics?

Open jobs

1 open PhD position (TVL E13 75%, up to 3 1/2 years)

We are seeking a highly motivated person with a background in physics, biology, computer science, mechanical engineering, biomedical engineering or related field and interested in biophysics, biomechanics, biological cybernetics, biorobotics or computational neuroscience research to be hired as soon as possible.
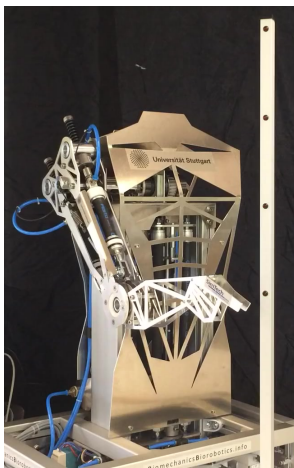
Our main research goals are:
Modelling the sensorimotor system of the human arm
Movement generation using a biophysical arm model
Exploration of technical and biological control concepts

Prior experience in both cybernetics, especially in the biological domain, and applying machine learning techniques is a plus.

You will be part of the Institute for Modelling and Simulation of Biomechanical Systems (IMSB) and the Stuttgart Center for Simulation Science (SimTech). You will directly collaborate with people working in fields as diverse as computational biomechanics, biomedical engineering, mechanobiology, muscle physiology, systems biology, cybernetics, physics, computer science, civil and mechanical engineering.

Your profile: A master's or diploma degree with background in physics, biology, computer science, mechanical engineering, biomedical engineering or related field. High motivation and research interests in biophysics, biomechanics, biological cybernetics or biorobotics. Excellent command of oral and written English with basic knowledge of the German language and good programming skills are mandatory. The status of near completion for master (or equivalent) degree can be considered.

Interested? Please send your application as PDF file to Prof. Dr. Syn Schmitt, Institute for Modelling and Simulation of Biomechanical Systems, schmitt@simtech.uni-stuttgart.de.

The single pdf file should include a motivation letter, the CV, the transcript of relevant degrees, links to your own publications and/or your master thesis. Please indicate the possible starting date for your contract. In case that you have further questions, please feel free to contact us or stream our website: http://www.imsb.uni-stuttgart.de. The University Stuttgart wishes to increase the proportion of female academic staff and, for this reason, especially welcomes applications from women. Severely challenged persons will be given preference in case of equal qualifications (Date of announcement: September, 23 2019).

Recent publications from our group

[1] Bayer A, Schmitt S, Günther M, Haeufle D. The influence of biophysical muscle properties on simulating fast human arm movements. Computer Methods in Biomechanics and Biomedical Engineering. 2017;20(8):803--821.

[2] Driess D, Zimmermann H, Wolfen S, Suissa D, Haeufle D, Hennes D, et al. Learning to Control Redundant Musculoskeletal Systems with Neural Networks and SQP: Exploiting Muscle Properties. In: Proc of the International Conference on Robotics and Automation. 2018.

[3] Günther M, Haeufle DF, Schmitt S. The basic mechanical structure of the skeletal muscle machinery: One model for linking microscopic and macroscopic scales. Journal of Theoretical Biology. 2018;456:137--167.

[4] Hammer M, Günther M, Haeufle DFB, Schmitt S. Tailoring anatomical muscle paths: a sheath-like solution for muscle routing in musculoskeletal computer models. Mathematical Biosciences. 2019;311:68–81.

[5] Haeufle DF, Schmortte B, Geyer H, Müller R, Schmitt S. The benefit of combining neuronal feedback and feed-forward control for robustness in step down perturbations of simulated human walking depends on the muscle function. Frontiers in Computational Neuroscience. 2018;12:80.

SimTech