

We currently have an opening for a

Postdoc
(TVL 13, full time, 2 years)

PRO-ACTIVE SUPPRESSION OF DYSFUNCTIONAL MOVEMENTS DURING ARM MOTION CONTROL

The Cluster of Excellence "Data-Integrated Simulation Science" (EXC 2075) is an interdisciplinary research center with more than 200 scientists performing research towards a common goal: We target a new class of modeling and computational methods based on available data from various sources, in order to take the usability, precision and reliability of simulations to a new level.

THE PROJECT

The goal of this research project is to pioneer a novel non-invasive approach to suppress unwanted (dysfunctional) movement while allowing intended movement for people suffering from neuro-degenerative diseases. This requires computational methods to predict human arm movement intentions and execution from multi-modal bio-signals stemming from real and synthetic data during everyday tasks. To this end, the project aims to combine eye movement recordings, multi-modal arm motion recordings, and novel machine learning techniques with a biophysical neuro-musculoskeletal human model to predict the next, most-likely intended user action.

YOUR TASKS

- Develop computational methods to predict human arm movement intentions and execution from multi-modal bio-signals stemming from real and synthetic data during everyday tasks
- Design and perform multi-modal eye and arm motion recordings (gaze using eye-tracker, kinematics using motion capture, EMG using surface electrodes)
- Apply novel machine learning techniques and combine with a biophysical neuro-musculoskeletal human model to predict the next, most-likely intended user action
- Contribute to other ongoing research projects within the host group

WE ARE LOOKING FOR

We seek strong applicants with a Doctorate in Computer Science, Mathematics, Physics or a closely related field ideally with a specific focus on Machine Learning, Bayesian Statistics, Biophysical Modeling. We value diversity and want to specifically encourage applications from underrepresented groups. Successful candidates should be curiosity-driven, ambitious, creative, and passionate about interdisciplinary research in the area of simulation and data sciences. Strong team working and critical thinking skills, aptitude for independent and creative work, as well as fluent English written and presentation skills are essential.

The position is fully funded (100%) and is available to applicants of any nationality. You will contribute to the leadership of ongoing projects, will have the opportunity to advise undergraduate and graduate students, and contribute to the teaching activities of the group.

If you are highly motivated and capable of addressing and solving scientifically difficult problems and if you are interested in doing research in an internationally oriented team, you should send your application to jobs@simtech.uni-stuttgart.de. Please submit your complete application by e-mail with one pdf attachment comprising a cover letter, academic CV, research statement, a full publication list, names and contact addresses of two referees, as well as academic certificates and transcript of records. If you have any questions regarding this application, please contact Prof. Syn Schmitt (schmitt@simtech.uni-stuttgart.de) or Prof. Andreas Bulling (Andreas.Bulling@vis.uni-stuttgart.de).

We cannot reimburse any costs arising from the performance of job interviews.

The University of Stuttgart has been awarded “family-friendly employer”. Flexible working hours, regular child care services, and family-networks allow for a better combination of professional and family life. The University of Stuttgart also offers a range of services to enhance social equity (<https://www.uni-stuttgart.de/en/university/profile/equality-diversity/>). Additionally, a dual career program is in place to offer assistance to partners of those moving to Stuttgart. For more information, please visit <https://www.uni-stuttgart.de/universitaet/arbeitgeber/dualcareer/>

The University of Stuttgart is an equal opportunity employer. Applications from women are strongly encouraged. Severely challenged persons will be given preference in case of equal qualifications.

Information on the collection of personal data in accordance with Article 13 of the GDPR can be found via the following link: <https://www.uni-stuttgart.de/en/privacy-notice/job-application/>