

The Department of Internal Medicine 3 – Rheumatology and Immunology together with the Institute of Applied Dynamics (LTD) of Friedrich-Alexander-Universität Erlangen-Nürnberg, are offering at the earliest possible time a

Research Project / Bachelor Thesis / Master Thesis

with the topic

Age and sex related differences in function and biomechanics of the human hand based on motion capture data.

Marker-based motion capturing is the current gold standard for measuring and assessing human movement. Movements such as walking are well studied, and differences in patterns influenced by diseases or muscular imbalances can be evaluated and used for diagnosis. However, evaluation of fine motor actions such as hand movement has been challenging to date. Within the CRC EmpkinS, the Department of Internal Medicine 3 – Rheumatology and Immunology and the Institute of Applied Dynamics (LTD) will conduct a large research study at the LTD motion capture laboratory. In a first step a group of 75 healthy subjects will be measured for characterizing hand movements. In the long-term these evaluations will help to define hand biomarkers for monitoring disease activity in rheumatic patients.



The project involves

- Measuring of hand movements via motion capturing and EMG in a large study cohort
- Development of analytic scripts for the evaluation of hand biomechanics
- Statistical analysis of relevant parameters

Qualifications

- Medical technology, engineering with focus on biomechanics, sport science or related studies
- Programming experience in Matlab
- Courses in biomechanics and/or statistics (desirable)

If interested, please E-mail to: Birte Coppers, birte.coppers@uk-erlangen.de