



Master Thesis

The Department of Internal Medicine 3, Rheumatology & Immunology Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen-Nürnberg is offering at the earliest possible time the following project

**Time-course of spatiotemporal gait parameters for monitoring treatment response  
in patients with musculoskeletal diseases**

Physical function is impaired in patients with musculoskeletal diseases. Monitoring disease activity following the weeks of change of treatment is very desirable and inertial sensor-based monitoring of gait may provide technology that allows for home based monitoring of treatment response based on physical function.

The thesis involves:

- Patient recruitment
- Functional assessments
- Patient support (Phone, Email) during the home-based monitoring
- Data collection using inertial sensors in patients with rheumatoid arthritis
- Processing and analysis of the collected data sets to identify the time course of gait parameters

Qualifications:

- Biomedical engineering / sport science studies
- Programming skills (e.g. Matlab, Python)
- Interest to work in a clinical environment with patient interaction
- German language skills to allow communication with the patients.
- Start date: September 1st

Application deadline: July 31<sup>st</sup>, 2024.

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