

The Institute of Applied Dynamics (LTD) at Friedrich-Alexander-Universität Erlangen-Nürnberg, offers several

Student theses

with topics in

Dynamic simulation of human hand movements and analysis of biomarkers for inflammatory arthritis

There are multiple theses available covering topics concerning the objective investigation of human hand function in context of rheumatoid and psoriatic arthritis. Each theses can be adapted to satisfy the requirements of a Bachelor's, Seminar, Project, or Master's thesis, as well as research laboratory.

They can cover one or multiple of the following tasks

- inverse simulation based on motion capture data,
- personalization & modelling,
- determination of biomarkers for inflammatory arthritis
- setting up a torque measurement setup and planning & conducting a small measurement campaign.

The theses are supervised by researchers at LTD and CRC 1483 EmpkinS where novel methods for non-invasive and objective estimation for diseases monitoring are being investigated.



Figure 1: Hand with reflective markers for motion capturing (far left), hand during ball grasping (left), dynamic hand model (right), and torque sensor for new measurement setup (far right).

Necessary qualifications

- knowledge in rigid body dynamics (DSK)
- basic programming skills (Matlab or similar)
- fluent English or German
- interest in simulation and/or biomechanics

Desirable qualifications

- basic knowledge in biomechanics
- knowledge in multibody dynamics (MKD)
- experience with marker based motion capturing

If you are interested send an email to:

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