

“Die Reise ins Ich” needs you!

“Die Reise ins Ich” is an interdisciplinary research project in which we aim to enable real-time, non-invasive monitoring of the human neuromechanical system from both first- and third-person perspective. In order to make this possible, many scientific and engineering challenges need to be addressed, involving – but not limited to – mathematical modelling of physical processes, multimodal measurement and estimation, computer-graphical visualization, as well as parallel and distributed computing.

We are looking for talented and hardworking individuals who are interested in applying and integrating state-of-the-art techniques in, e.g., motion capture, sensor fusion, game development, etc. for the 3-D visualization of human anatomy and physiology to join the team.

We expect from you:

- Solid knowledge in the following disciplines is a **must**:
 - modern control theory,
 - classical mechanics,
 - analytical and computational mathematics,
 - computer programming.
- In addition to the above, knowledge in one or more of the following disciplines **may** be needed:
 - analytical mechanics,
 - continuum mechanics,
 - circuit theory,
 - measurement engineering and sensor technology,
 - electromagnetic field theory,
 - human physiology and anatomy,
 - electrophysiology,
 - parallel and distributed computing,
 - computer graphics.

We offer:

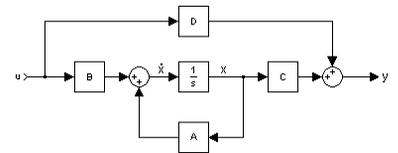
- experienced and high-quality mentorship,
- a well-established workspace, including access to a state-of-the-art laboratory.

If you are interested and motivated, please send your application with a **cover letter** stating

- how this project would benefit from your expertise,
- for what (thesis / internship / semester project / ...) you are applying, including the required credit points with respective work hours,

and all relevant **transcripts of records** to Mr. Tingli Hu, M.Sc. M.Sc. via e-mail (tingli.hu@tum.de).

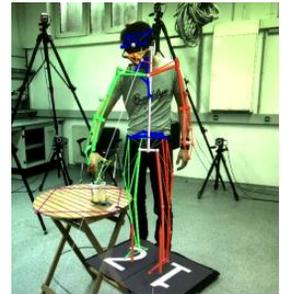
Mathematical modelling



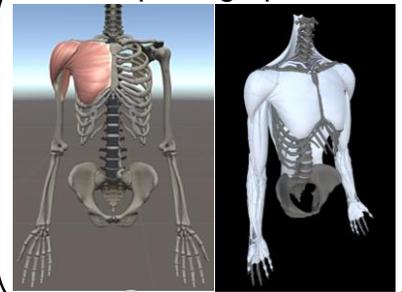
$$\dot{x} = Ax + Bu$$

$$y = Cx + Du$$

Multimodal



Computer graphics



Real-time monitoring

