Optimization and Biomechanics for Human Centred Robotics
KIT BioRobotics Lab

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Endowed Chair by Hector Foundation II
Institute for Anthropomatics and Robotics (IAR)

Bachelor's Thesis:
Biomechanical Differences between Beginners and Experts in Sports Motion

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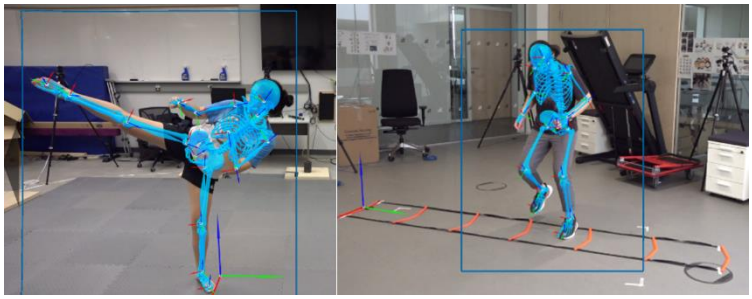
Background

In every sport, athletes are trained in specific motions and over time, their technique yields optimized performance. From a biomechanics perspective, it is always interesting to investigate the underlying kinematics and/or kinetics. Not only can this identify the biomechanics criteria for success, it can also help us understand why certain biomechanical behavior is crucial for an optimized sports motion.



Scope of the thesis

The Bachelor's thesis focuses on ….

- Designing the experiment protocol: Students will have the opportunity to pick a motion that is related to a sport of interest, design an experiment around it
- Collecting and processing data: Students will gain hands-on experience working with state-of-the-art motion capture equipment of the IAR-HCR BioRobotics Lab
- Analysing data

Sports motions include and are not limited to football, tennis, and martial arts. Students can also propose their own motions / sports.

Required knowledge

This thesis requires basic programming skills.