



## Bachelor's or Master's Thesis – Motion Retargeting for Animated Characters

### What is it about?

One of the key ingredients in Virtual Reality motor learning is the tracking of users' motion during the execution of motor actions. To give users guidelines on how to improve their performance, motion is mapped in real time on virtual characters. Often, the skeleton morphology of a tracked user differs from the morphology of the virtual character. In order to create a convincing mapping, retargeting of the motion is necessary.

### Assignment

This thesis aims at implementing an approach presented by Feng et al. [1] to perform an online retargeting of motion on various virtual characters. This ranges from ensuring foot contact with the floor while preventing foot sliding et cetera to adapting the rotation of various limbs under given constraints. The thesis will be located inside the Large Scale Project “Intelligent Coaching Space” (ICSPACE): The project aims at the research question of how humans can be supported in learning and practicing movement tasks, as needed in sports training, motor skill learning, or physical rehabilitation.

### Recommended skills

- Experience in C++ or Python programming
- Knowledge in computer graphics and animation

[1] Andrew Feng, Yazhou Huang, Yuyu Xu, and Ari Shapiro. Fast, automatic character animation pipelines. *Computer Animation and Virtual Worlds* 25:3–16, (2014).

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