

HiWi

Title: Virtual Reality (VR) training for elderly patients

Background: For many elderly patients falling represents a serious risk. Due to old age, patients' body control, balance, and general fitness decrease, which increases the risk of falling. In addition, due to weakened bones, a fall can easily lead to fractures among other complications. To avoid falling in the first place, patients can be trained in Virtual Reality (VR) which can help to improve their balance and general body control. A downhill skiing scenario has been implemented to motivate body movement.

Tasks: The current implementation should be extended. The application is implemented with the game engine Unity. Player models should be included and animated. The code base should be modularized and improved to allow for easier extension.

Furthermore, the application should be evaluated. In a first step evaluation is done with healthy participants. Preparation and execution of experiments with partners at the UKE should be supported. Results should be compiled and a publication should be prepared.

Requirements: Good programming skills (ideally in C# and Python), ideally experience with game design (Unity), interest in hands-on experimental evaluation

References: TBD

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