informatik-Kolloquium

Der Fachbereich Informatik der Johannes Kepler Universität Linz[1] lädt in Zusammenarbeit mit der Österreichischen Gesellschaft für Informatik (ÖGI) zu folgendem Vortrag ein:

Topic: **Haptic Mixed Reality - Exploring Applications in Surgical Simulation**

Presenter: **Prof. Matthias Harders, University of Innsbruck**

Date: **November 29th, 2017, 10:15 am**

Location: **Johannes Kepler University Linz**
Hochschulfond Building, Room HF 9904

Abstract: In haptic mixed reality, touch feedback of the real environment is merged with virtual haptic stimuli, thus altering the haptic perception of objects. In our research, we explore the feasibility of using this paradigm for medical training systems. In this talk, an overview of the technique will be provided as well as application scenarios be outlined. In earlier work, we had explored the use of such haptic augmentation in the context of tissue palpation. More recently, we focused on the modification of surgical instruments, to provide augmentation during interaction with mock-up anatomical models; specifically, a prototype system of a modified surgical bone drill has been developed. The setup is capable of providing different stiffness augmentations, representing varying bone densities, based on twisted-string actuation.

Short Bio: Matthias Harders studied Computer Science with focus on Medical Informatics at the University of Hildesheim, Technical University Braunschweig, and University of Houston, TX, till 1999. He completed his PhD in 2003 at ETH Zurich, where he also obtained his habilitation in 2007, in the area "Virtual Reality in Medicine". He worked at ETH until 2012, with short research visits in the USA, Japan, and Australia. Following a position as Reader at the University of Sheffield, UK, he became a full professor in 2014 at the University of Innsbruck, where he leads the Interactive Graphics and Simulation group. He is a co-founder of the IEEE Technical Committee on Haptics, the EuroHaptics Society, and the IEEE Transactions on Haptics. In 2008 he co-founded the spin-off company VirtaMed, which develops medical training systems. His current research focus is on computer haptics, virtual/augmented reality, and physically-based simulation.

Einladender: Univ.-Prof. Dr. Oliver Bimber, Institute of Computer Graphics

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[1] Der Fachbereich (http://informatik.jku.at) besteht aus folgenden Instituten:
Application Oriented Knowledge Processing (FAW), Bioinformatics, Computational Perception, Computer Architecture, Applied Systems Research and Statistics, Computer Graphics, Formal Models and Verification, Networks and Security, Integrated Circuits, Pervasive Computing, Software Systems Engineering, System Software, Telecooperation, Signal Processing

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