

laden gemeinsam zum

GASTVORTRAG

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**“HCI Laboratory at Masaryk University and
its Current Research Topics”**

Abstract:

This talk aims to present current areas of interest of the Human Computer Interaction Laboratory at the Faculty of Informatics, Masaryk University, Brno.

Our small research group currently concentrates on several topics. The largest project called CAVER (<http://caver.cz/>) is dedicated to analysis and visualization of protein structures. This long-term project is based on a tight cooperation with the group of biochemists (also from Masaryk University). In the talk I'll concentrate on the main principles and future challenges of this project. Other projects include:

- Modular system for virtual reality (<http://vrecko.cz/>) using the OptiTrack as an input device. It aggregates many modules of different usage – rendering of a dynamically generated and hierarchically structured world (which contains e.g. terrain, cities, road networks and/or various natural elements), artistic creations such as free hand painting in 3D space, geometrical and string sculptures or fractal rendering, real-time motion capture and other.
- Project dealing with the forensic facial identification (called FIDENTIS - <http://fidentis.cz/>). In this project, we cooperate with the Department of Anthropology at the MU. Currently the software is able to create 3D facial composite, to extract various feature points and to compare faces.
- Parallel construction of acceleration data structures for ray tracing on the GPU (in cooperation with Department of Computer Graphics and Interaction at the Czech Technical University in Prague).
- Exploring new methods for collision detection between highly detailed objects with applications in haptics.

Biography:

Barbora received her Ph.D. at the Faculty of Informatics, Masaryk University, in December 2011. The topic of the thesis was Visualization Techniques for Static and Dynamic Protein Molecules and Their Channels. In 2012 she spent 6 months in a commercial sector - she worked as a programmer and analyst at Home Credit International. Since July 2012 she works as an assistant professor at the Department of Computer Graphics and Design (Faculty of Informatics). The main areas of interest include computational geometry and visualization.

Datum: 13. Dezember 2013, 10:30 Uhr s.t.

Ort: TU Wien, Favoritenstr. 9, Stiege 1, 5. Stock, Seminarraum E186

