TECHNISCHE UNIVERSITÄT WIEN
Institut für Computergraphik und Algorithmen
Arbeitsbereich für Computergraphik

OESTERREICHISCHE COMPUTER GESELLSCHAFT
AUSTRIAN COMPUTER SOCIETY

laden gemeinsam zum

GASTVORTRAG

Lukas Gruber
Institute for Computer Graphics and Vision,
Graz University of Technology

"Overview of CDL Handheld Augmented Reality Lab and my recent work on lightsource estimation and simulation in Augmented Reality"

Abstract:

The Christian Doppler Laboratory for Handheld Augmented Reality at Graz University of Technology was founded in 2008. Its mission is research and development of Augmented Reality (AR) technology for mobile phones. Today the CDL investigates a wide spectrum of research topics. In the first part of the talk I will give an overview about the recent achievements in Social AR, Information Presentation in AR, Tracking and Real-time Self Localization, AR based Navigation and AR Graphics.

The second part of the talk will be about my PHD topic – Visual Coherent Rendering. Visually-coherent rendering for augmented reality seamlessly blends the virtual world and the real world together in real-time. One challenge is the correct handling of lighting. Real-world light should be applied to virtual objects and virtual light sources should affect real world objects. This implies the measurement and estimation of the real-world illumination, also known as photometric registration. So far, photometric registration has mainly been done through capturing images from mirror balls or planar markers or by using high dynamic range cameras with fish-eye lenses. In my research I am investigating real-time methods for photometric registration from unknown environments, which are also applicable in AR.

Biography:

Lukas Gruber received his MSc in 2008 from Graz University of Technology. From 2005 to 2008 he was employed as software engineer at Bongfish Interactive Entertainment, a computer game company located in Graz (Austria). In this period of time he worked on a cross-platform render engine for the snowboard game Stoked Rider and the successor Drop Point Alaska. In 2008 he finished his Diploma Thesis at Bongfish. The work was focused on game render engines supporting a vast number of light sources. Currently, he is employed as research assistant at the Graz University of Technology. His research interests are visual coherent real-time rendering methods for Augmented Reality on handheld devices.

Datum: 2. Dezember 2011, 10:30 Uhr s.t.
Ort: TU Wien, Favoritenstr. 9, Stiege 1, 5. Stock, Seminarraum E186