informatik-Kolloquium

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

Anselm Grundhöfer
Disney Research Zürich

Augmenting Physical Avatars Using Projector-Based Illumination

December 10th, 2013, 04:00 pm
Johannes Kepler University Linz, Science Park S2 120

Dr. Anselm Grundhöfer is a Senior Research Engineer at Disney Research Zürich, where he works in Dr. Paul Beardsley's computer vision group as technical lead of the Procams Toolbox project. Before joining Disney, he graduated in Media Systems Sciences (2006) and obtained his Doctor of Engineering (2010) at Bauhaus University Weimar, where he worked under the supervision of Dr. Oliver Bimber.

Anselm's work is mainly focused on developing projector-camera systems and helping deploying them, for example, in Disney theme park attractions. Most recently, he is working on multi-projector optimization methods overcoming several still not satisfyingly solved problems when projecting onto non-trivial surfaces. Besides that he is also conducting research in other fields of computer vision, AR, video processing and display technologies.

Bringing virtual characters to life is one of the great challenges in computer graphics. While there were tremendous advancements in capturing, animating, and rendering realistic human faces in the past decade, displaying them on traditional screens conveys only a limited sense of physical presence. Animatronic figures or robotic avatars can bridge this gap. However, in contrast to virtual face models, reproducing detailed facial motions on an animatronic head is highly challenging due to physical constraints. Although steady progress in creating highly sophisticated robotic heads that strive to recreate convincing facial motions can be observed, for example those in

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[1] Der Fachbereich (http://informatik.jku.at) besteht aus folgenden Instituten:
Anwendungsorientierte Wissensverarbeitung (FAW), Bioinformatik, Computational Perception, Computer-Architektur, Computergrafik, Formale Modelle und Verifikation, Informationsverarbeitung und Mikroprozessor-technik (FIM), Integrierte Schaltungen, Pervasive Computing, Systems Engineering and Automation, Systemsoftware, Telekooperation

Disney World's Hall of Presidents or "Geminoids", these achieve only limited expressiveness when compared to a real human being.

In my presentation I will present a processing pipeline for augmenting physical avatars using projector-based illumination, significantly increasing their expressiveness by superimposing high-frequency details using projection based illumination. Besides a detailed description of the different processing steps of the system, I'll present an overview of the variety of advanced projection systems the Walt Disney Company uses in current theme park installations to enhance the visitor's sense of immersion.

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

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