

 informatik-Kolloquium

Der Fachbereich Informatik der Johannes Kepler Universität Linz¹ lädt in Zusammenarbeit mit der Österreichischen Gesellschaft für Informatik (ÖGI) zu folgendem Vortrag ein:

Ákos Maróy, Aero Glass

Head Orientation Tracking in an Aircraft Cockpit Environment

March 18th, 2015, 10:30 am

Johannes Kepler University Linz, Science Park S2 Z74

Ákos Maróy is the founder of Aero Glass, an Augmented Reality solution for aircraft pilots. Ákos has a background in software engineering, has founded several IT companies & startups in the past, being still involved in the outsourced software development shop EU Edge. Ákos has a media- and bio-art background, having exhibited at various venues, including the Venice Architecture Biennale, the Prix Ars Electronica Festival, the NTT InterCommunication Center in Tokyo and the Yamaguchi Center for Art & Media in Japan, as a member of the Tokyo-based art collective doubleNegatives Architecture. Ákos is the co-founder of atlatzo.hu, an investigative journalism NGO based in his native Hungary.

A Head-Mounted Display-based Augmented Reality solution such as Aero Glass needs to track the orientation of the users head to be able to display AR in a usable fashion. While off-the-shelf Head-Mounted Displays such as the Epson Moverio BT-200 or Osterhout ODG R6 / X6 contain IMUs, tracking via an IMU is imprecise mainly because of gyro drift. In an aviation context, neither the accelerometer nor the magnetometer cannot be used to offset gyro drift with sufficient results. Thus optical tracking approaches are investigated that allow for determining the users head orientation in relation to the cockpit, which, combined with a knowledge of the aircraft orientation, allows to offset gyro drift. Several optical tracking approaches are investigated: 'inside out', where a camera on the head-mounted display is used, using markerless SLAM-based tracking, tracking markers in front of and above the users head. An 'outside-in' approach is also investigated where an external camera is tracking the users head by tracking IR LEDs.

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

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 Mikroprozessortechnik (FIM), Integrierte Schaltungen, Pervasive Computing, Systems Engineering and Automation, Systemsoftware, Telekooperation