

Visual Computing Colloquium

Thursday, 12 December 2019, 16:00

C115, Campus Sankt Augustin



Collaboration in Virtual Reality

Prof. Dr. Bernd Fröhlich

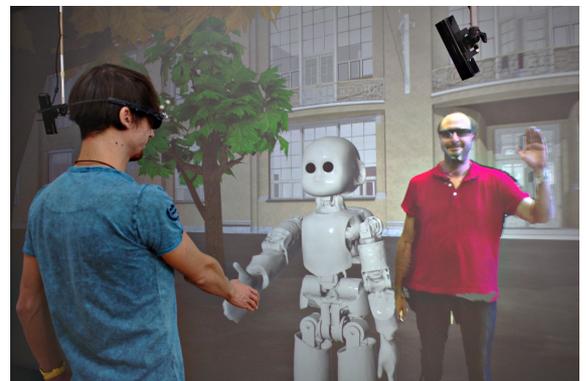
Bauhaus-Universität Weimar



Bernd Fröhlich is a full professor of Computer Science at Bauhaus-Universität Weimar. He is chair of the Virtual Reality and Visualization Research Group which focuses on basic and applied research in multi-user virtual reality and 3D user interfaces, visualization and rendering algorithms for very large datasets as well as information visualization. After completing his PhD in computer science at the Technical University of Braunschweig, he worked at the German National Research Center for Information Technology (GMD) and was a research associate with the computer science department at Stanford University. He was a cofounder and member of the steering committee of the IEEE Symposium on 3D User Interfaces, chair of the steering committee of the IEEE Virtual Reality conference from 2014 to 2018 and received the 2008 IEEE Virtual Reality Technical Achievement Award. Fröhlich serves as an associate editor of the journal *Frontiers in Virtual Environments*.

Abstract

Immersive telepresence allows distributed groups of users to meet in a shared virtual 3D world. Our approach uses two coupled projection-based multi-user setups, each providing multiple users with perspective correct stereoscopic images. At each site, the users and their local interaction space are continuously captured using a cluster of registered depth and color cameras. The captured 3D information is transferred to the respective other location, where the remote participants are virtually reconstructed in life-size. Local and remote users can jointly or independently explore virtual environments and virtually meet face-to-face for discussions. We structure collaborative activities of collocated and remote users using Photoportals. Virtual photos and videos serve as three-dimensional references to objects, places, moments in time and activities of users. They can be shared among users and serve as portals to the captured information. Our Photoportals also provide access to intermediate or alternative versions of a scenario and allow the review of recorded task sequences that include life-size representations of captured users.



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