ETH zürich

GEOMATIK SEMINAR

HERBSTSEMESTER 2019

Institut für Geodäsie und Photogrammetrie, www.igp.ethz.ch
Institut für Kartografie und Geoinformation, www.ikg.ethz.ch
Institut für Umweltingenieurwissenschaften, www.ifu.ethz.ch

Stefano Franscini Platz 5
8093 Zürich

Multimodal Gaze-supported Input in Mixed Reality and its Promises for Spatial Research

Dr. Sophie Stellmach
Sr. Scientist Mixed Reality R&D
Microsoft, Redmond / USA

Thursday, 10th October 2019, 5:00 p.m.
ETH Hönggerberg, HIL D 53

Abstract:

Mixed Reality headsets such as *Microsoft HoloLens 2* blend the virtual with the real world and provide tremendous new possibilities for users and researchers alike. The integration of fully articulated hand tracking, eye tracking, voice input in context with continuously improving spatial mapping and scene understanding services offer new and exciting applications and avenues of research. On the one hand, this provides users with entirely new ways to engage with both their virtual and real environment. On the other hand, it provides a rich and powerful toolset for researchers to, for example, investigate visual attention and hand-eye-coordination for spatial research in a much more complex space (e.g., the cockpit of an aircraft). This may support diverse applications ranging from more effective learning, navigating more efficiently through a virtual 2D or 3D map that is placed in the physical environment, finding your way through an unknown building to exploring new ways to investigate shared visual attention in a complex 3D space. As part of the *Microsoft HoloLens* team, I will talk about the possibilities and challenges that I see for Augmented and Mixed Reality headsets – in particular with respect to how spatial research can benefit in various ways from this innovative technology.

Bio:

Sophie Stellmach is a Senior Scientist at Microsoft where she explores entirely new ways to engage with and blend our virtual and physical realities in products such as *Microsoft HoloLens*. With her PhD from the Technical University of Dresden, Germany, and a strong research background in Human-Computer Interaction, she bridges the gap between software engineering to innovative UX and multimodal interaction design. Sophie has been an avid eye tracking researcher for over a decade with her work ranging from using eye tracking as part of a multimodal psychophysiological logging system, novel ways to visualize visual attention in 3D virtual environments to exploring multimodal gaze-supported interactions in her PhD.