

An On-going Journey of Making MR a Reality – Understanding Humans' Capabilities and Limitations for Novel Product Design

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Abstract: Mixed Reality (MR) and Augmented Reality (AR) are on their way to entering people's daily life more ubiquitously. Over the past decades, we have come across plenty of compelling scenes and vivid stories which demonstrate their great potentials. In the meantime, various MR & AR products have started making their presences into the early phase of the adoption curve. Owing to the remarkably complex hardware and software technologies embedded in these wearable products, along with users' presumably high expectations of having them in their daily life, these gaps and challenges would not be overcome all of a sudden. This is likely to be a journey with evolving multifaceted relationships between the advancement of the technologies on the products and people's use of them. Such relationships involve the continuous engagement of humans' sensorimotor and cognitive systems integrally interacting with virtual and physical objects and surroundings shaped by these devices.

In this talk, I will be sharing some of my practices on this exciting journey. I will demonstrate the potentially near-term MR applications in people's daily life through a list of examples and prototypes. They will not only depict picture abundant possibilities for the future of spatial computing, but also exemplify the inherent challenges when users attempt to interact with these synthetical environments more directly and intuitively. Finally, I will discuss a high-level framework that illustrates perspectives from users' fundamental tasks to help shaping the research and design for such broad open application spaces.

Bio: James Lin, Ph.D. is currently a Research Science Manager of user experience in Facebook Reality Labs (FRL) in Seattle, Washington. In FRL, he focuses on human perceptual research for innovations on Facebook and Oculus VR/MR/AR platforms, and leads a group of scientists dedicating to the overall research portfolio for enhancing user health and safety across FRL products and applications. James also actively contributes to an advisory committee in XRA (XR Association; xra.org/), which aims at promoting responsible development and adoption of virtual, augmented and mixed reality in the society. Prior to joining FRL, James was a Principal Scientist for Immersive and Intelligent Experience Research at GE Global Research in San Ramon, California. He also worked as a Research Project Manager at Siemens Corporate Research in Princeton, New Jersey. He received his Ph.D. from the University of Washington with focus on HCI in virtual environments, and worked on VR research under Prof. Tom Furness at the Human Interface Technology Lab (HITL) from 2000-2004. James has his B.S. in Industrial Design and M.S. in Design Studies.