Building Digital Twins and Interacting with it in the MetaVerse

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***Abstract*:** The Metaverse is a System of Systems bridging the physical with the digital, in a large scale, persistent manner within a community of people. This talk presents an overview of the computer vision and deep learning work that is involved in building Metaverse: world sensing, user sensing and interactions. World sensing features help map, reconstruct and understand the world by creating its digital twin. Once the digital twin is built, users can enter the Metaverse by localizing into the map and interacting with objects, entities, and digital resources attached to the map. The talk will provide a deep dive into the main perception building blocks along with key challenges and open problems.

Biography: Ashwin is currently leading the Applied Science activities within Amazon Fashion focusing on Virtual Try-on features. He was previously at Magic Leap where he led the World Sensing and MagicVerse teams. His team was responsible for research and productization of computer vision and deep learning features such as mapping, reconstructing and understanding the world along with tracking and localizing users in it. In addition, Ashwin also served as a technical lead for Perception R&D working on defining the sensor suite and hardware configuration for the next generation of Magic Leap devices. Prior to joining Magic Leap, he was with Qualcomm Research in San Diego where he was involved in various computer vision and machine learning projects for applications in augmented reality and context aware computing on mobile phones. Ashwin holds a Ph.D. from the University of Maryland, College Park where he conducted research in several topics in image processing, multimedia forensics, security and watermarking. He is a IEEE Senior Member with 7 journal papers, 30+ conference papers, 40+ U.S. patents and 50+ patent applications with a combined 4300+ citations.