

Keynote Speaker

Requirements and Recent Directions in Augmented Reality Visualization

Gerard Jounghyun Kim
Korea University



ABSTRACT

The field of information visualization studies the interactive visual representations of data to reinforce human cognition, thereby facilitate the discovery of new tacit knowledge and even amplify human intelligence. Augmented reality (AR) shares the same objective and it can be treated as one particular form of information visualization where the data are both the real objects and the augmentations for them. As such, it presents a unique set of problems within the general requirements for an effective information visualization method. In this talk, I will first outline and put forth four main requirements for AR visualization, namely, (1) naturalness, (2) visibility (3) persistence/stability and (4) glass/hmd ergonomics. Then I will present a short survey of the existing AR visualization techniques and characterize them by their attributes and categorize them in terms of how they satisfy or address the proposed requirements. Finally, I will also introduce some of my own on-going research work in this area, specifically, for real time contrast adjustment for mobile augmented reality, usability with glasses, augmentation data organization, and multimodal AR data presentation. I hope that this work can instigate and shed some light on the future directions for further research in AR visualization techniques.

BIO

Currently, Professor, Dept. of CSE, Korea University
Research Interests: VR/AR/MR, Human Computer Interaction, Computer music
BS ECE, Carnegie Mellon University, 87
MS/PhD, Univ. of Southern California, 94

Computer Scientist, National Inst. of Science and Technology (NIST), 94-96
Professor, Dept. of CSE, POSTECH, 96-06
Visiting Positions at USC, KAIST, Com2us

2 Books:

Designing Virtual Reality Systems: Structured Approach, Springer, 2005
Human Computer Interaction: Fundamentals and Practice, CRC Press, 2015

Has published in Presence, IEEE VR, IEEE TVCG, IEEE ISMAR, ACM VRST, ACM CHI, INTERACT, etc.
IEEE ISMAR General Co-chair (2010), ACM VRST Program Chair (2006), etc.
Convener of ISO JTC 1 SC 24 WG 9 (Mixed and Augmented Reality Working Group)