

Title: Teleport to the Augmented Real-World driven by 3i innovation
(#immersive, #interactive, #intelligent)

Abstract:

New Zealand is well-known for its beautiful nature, which has contributed to it being a prime destination for many movies and commercials. A strong media and technology ecosystem has been built to support this industry.

Computer Graphics (CG) and visual effects (VFX) enables seamless blending between computer generated imagery and recorded real footage. Recent advancements of real-time technologies actuate the transition from off-line post-production to real-time. Immersive media technologies transform the end-user experience from observing, to a high sense of presence within the story. Furthermore, high-speed networking changes the media distribution from a pre-recorded medium to live streaming.

This talk will introduce our research in real-time live visual effects, immersive telepresence, augmented telecollaboration, volumetric environment capturing and modelling, appearance modelling and reconstruction, deep neural networks for computer graphics, and more.

Then, we will explain the convergence of the immersive, interactive, and intelligent technologies, introduce a concept of augmented telepresence, the frame work and platform that allow user's illusion to virtually teleport to the real-space and interact with people in distance.

Our recent case studies with public end-users will be introduced including a live-streaming concert to online viewers (controlled by a producer in real-time with augmented live VFX), virtual tourisms, and more. Potential applications and future extensions are further discussed in the Q&A session.

Bio

A. Professor. Taehyun James (TJ) Rhee is the Director of Computational Media Innovation Centre, associate professor (tenured full professor in US system) at Faculty of Engineering, co-founder of Computer Graphics degrees at School of Engineering and Computer Science in Victoria University of Wellington, and a founder of the Mixed Reality start-up, DreamFlux.

He worked in the immersive and interactive technology sector over 25 years, across academia and industry. He worked at Samsung (1996-2012) as their Principal Researcher and General Manager to lead their Computer Graphics, Medical Physics Research at Samsung Advanced Institute of Technology (SAIT), and a Senior Researcher and Senior Manager of Research Innovation Centre at Samsung Electronics. He served as the general chair for Pacific Graphics 2020-2021, XR chair for SIGGRAPH Asia 2018, executive committee for Asia Graphics Association.

His current research focuses on;

Post Metaverse - Immersive telepresence, Augmented telecollaboration, Extended Reality, Multimedia streaming, Multiuser communication, and Live visual effects.

Digital Twins - High-fidelity real-time computer graphics, 3D volumetric scanning, environment modeling, photo-realistic rendering, and cinematic composition.

AI effects - training data generation, machine learning for computer vision and graphics, and deep neural network.