

Title: Neural Modeling and Rendering for MetaHuman Creation

Abstract: Recent advances on deep learning, in particular, neural modeling and rendering, have renewed interests on developing effective MetaHuman creation tools. Such tools aim to overcome the limitations of traditional 3D reconstruction techniques such as structure-from-motion (SfM) and photometric stereo (PS) by reducing reconstruction noise, tackling texture-less regions, and synthesizing high quality free-view rendering. In this talk, I present recent efforts from my group at ShanghaiTech in collaboration with DGene on neural MetaHuman creation. Specifically, I demonstrate our latest neural human body reconstructor, deep 3D face synthesizer, anatomically correct 3D hand tracker, and ultra-realistic hair modeler. These solutions, coupled with markerless motion capture systems, can produce dynamic virtual humans at an unprecedented visual quality as well as lead to profound changes to MetaVerse creation technologies.