Title: Can Computers Grade American Sign Language Homework Videos?

Abstract: American Sign Language (ASL) is a primary means of communication for 500,000 people in the US, and a distinct language from English, conveyed through hands, facial expressions, and body movements. Most prior work on ASL recognition has focused on identifying a small set of simple signs performed, but current technology is not sufficiently accurate on continuous signing of sentences with an unrestricted vocabulary. In this talk, I will share our research to identify linguistic/performance attributes of ASL without necessarily identifying the entire sequence of signs and automatically determine if a performance contains errors made by ASL students through fusion of multimodality (facial expression, hand gesture, and body pose) and multisensory information (RGB and Depth videos).

Bio: Dr. YingLi Tian is a CUNY Distinguished Professor in Electrical Engineering at the City College of New York (CCNY) and Computer Science at Graduate Center of the City University of New York (CUNY). She is a Fellow of the Institute of Electrical and Electronics Engineers (IEEE). She received her PhD from the Department of Electronic Engineering at the Chinese University of Hong Kong in 1996. Her research interests include computer vision, machine learning, artificial intelligence, assistive technology, medical imaging analysis, and remote sensing. She has published more than 200 peer-reviewed papers in journals and conferences in these areas, and holds 29 issued patents.

She is a pioneer in automatic facial expression analysis, human activity understanding, and assistive technology. Dr. Tian’s research on automatic facial expression analysis and database development while working at the Robotics Institute at Carnegie Mellon University has made significant impact in the research community and received the “Test of Time Award” at IEEE International Conference on Automatic Face and Gesture Recognition 2019. Before joining CCNY, Dr. Tian was a research staff member at IBM T. J. Watson Research Center and led the video analytics team. She received the IBM Outstanding Innovation Achievement Award in 2007 and the IBM Invention Achievement Awards every year from 2002 to 2007. Since Dr. Tian joined CCNY in Fall 2008, she has been focusing on assistive technology by applying computer vision and machine learning technologies to help people with special needs including the blind and visually impaired, deaf and hard-of-hearing, and the elderly. She serves as associate editors for IEEE Trans. on Multimedia, Computer Vision and Image Understanding, Journal of Visual Communication and Image Representation, and Machine Vision and Applications.