ASU Sensor, Signal & Information Processing (SenSIP) Center
Ira A. Fulton School of Engineering, Arizona State University
SenSIP Center
GWC 411 | PO Box 875706
Arizona State University
Tempe, AZ 85287-5706
480 965 5311 (Phone)
480 965 8325 (Fax)
sensip@asu.edu

SenSIP Seminar Series

Musical Immersion in Augmented Reality: Real-Time Video Rendering for Reference View Synthesis

Presenter: Movinya Gunatilaka
Undergraduate Student in SCAI, Barrett Honors College
October 5, 2023, 3:30 PM / GWC 487 and Zoom: https://asu.zoom.us/j/84377030681

Abstract

Since the COVID-19 pandemic, the use of videoconferencing platforms like Zoom has skyrocketed, bringing people together from any location. This trend has not translated well to the world of musicians and performers however. Visual and audio delays from videoconferencing platforms prevent separated musicians from performing together. Musicians rely heavily on visual and audio cues for group and individual performance. For example, a quartet can start a musical piece by simply breathing together. How can we enable a more realistic experience for musicians to perform together from different locations? This research focused specifically on the use of view synthesis to allow musicians to play their instruments through an extended reality space. Real-time view synthesis puts together multiple perspectives from an array of cameras recording live feed. This allows for the interpolation between different perspectives through live video with an augmented reality (AR) headset such as the Microsoft HoloLens. In conclusion, with a set of AR glasses and some cameras, musicians will be able to feel as if they are playing next to each other in real time. The work presented in this semnar was sponsored by Fulbright Canada and MITACS, in collaboration with Dr. Jeremy Cooperstock, Emmanuel Wilson, and Emma Tomiuk at the Centre for Interdisciplinary Research in Music, Media, and Technology (CIRMMT) at McGill University

Biography:

Movinya Gunatilaka is a junior in Computer Systems Engineering and part of Barrett, the Honors College at ASU. This current seminar presents her work from her Fulbright-MITACS Globalink research experience during the summer of 2023. Movinya started as a student in the 2022 NSF international research experiences for students (IRES) at Dublin City University(DCU) in Ireland. My ASU SenSIP –DCU Insight collaborative project focused on the prediction of children's VO2Max using machine learning for the "Moving Well Being Well" project. She is currently working at SenSIP through on an NSF REU project on Quantum Machine Learning for imaging applications and is eager to continue forward in the quantum information science field.

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