Cheng-Hao Wu

Educations

2019 – Present **National Tsing Hua University (NTHU), Taiwan**, *Master program in Information Systems and Applications*.
Thesis Topic: On Machine-Learning Based Point Cloud Compression Algorithms

2014 – 2019 **National Central University (NCU), Taiwan**, *Bachelor degree in Atmospheric Sciences*.

Research Interests

Multimedia networking, 3D point cloud, point cloud compression, augmented reality, virtual reality, and 3D model reconstruction.

Publications

Conference/ Workshop papers

C. Wu, C. Hsu, T. Kuo, C. Griwodz, M. Riegler, G. Morin, and C. Hsu *PCC Arena: A Benchmark Platform for Point Cloud Compression Algorithms. Proc. of ACM International Workshop on Immersive Mixed and Virtual Environment Systems (MMVE'20)*, Istanbul, Turkey, June 2020.

Working Experience

September 2019 – Present Research Assistant, Networking and Multimedia System Lab, Department of Computer Science, NTHU

March 2020 – Present Assistant System Administrator, Computer and Communication Center, NTHU

Research Experience

Point Cloud Compression.
Modern mobile and wearable devices are getting more and more powerful, which enables many innovative applications that combine virtual and physical worlds known as Extended Reality (XR) applications. Point clouds are more suitable to XR applications than meshes for two reasons: (i) less computational demands on resource-limited mobile devices and (ii) easier point cloud editing due to no connectivity among points. However, typical point clouds dictate extremely high density for good visual quality. Hence, efficient Point Cloud Compression (PCC) algorithms are essential for the success of XR applications. To fairly and comprehensively compare the performance among different PCC algorithms, we propose a general methodology and implement the platform called PCC Arena.

Networked Drone Simulators.
With the rapid growth of drone technologies, the tasks performed by drones get increasingly more complex. Tasks performed by drone swarms are even more complex because of: (i) the interplays among multiple drones and (ii) the diverse and dynamic nature of wireless channels. Evaluating the drone swarm applications through experiments is inherently challenging. In contrast, drone simulators allow researchers, engineers, and hobbyists to fairly validate their designs, algorithms, and implementations of drone swarms at a lower cost and with fewer efforts. Therefore, we survey on networked drone simulators and plan to run some applications on them.