Yuan-Chun Sun

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Education

National Tsing Hua University, MS in Information Systems and Applications   2023 – 2025 (Expected)
- GPA: 4.2/4.3 (Transcript)
- **Advisor:** Prof. Cheng-Hsin Hsu
- **Thesis Topic:** Immersive Multimedia Streaming in Next-Generation Mobile Networks

National Tsing Hua University, BS in Interdisciplinary Program of Electrical   2019 – 2022
Engineering and Computer Science
- GPA: 3.74/4.3 (Transcript)

Research Interests

Multimedia Networking, Immersive Video Streaming, Virtual Reality, Augmented Reality, and Wireless Networks

Experience

Research Assistant at Networking and Multimedia Systems Lab, National Tsing   July 2021 – Present
Hua University – Hsinchu, Taiwan
Advisor: Prof. Cheng-Hsin Hsu
- Conducted extensive research in immersive multimedia systems, contributing to various projects:
    - Optimal Camera Placement for 6-Degree-of-Freedom Multicast of 3D Scenes.
    - Enabling XR Cloud Gaming in 6G Cellular Network. (Joint work with MediaTek)
    - Mitigating Privacy Threat in VR Application. (Joint work with NYCU)
    - Volumetric Video Streaming System under Dynamic Networks. (Joint work with NUS and NYCU)
    - Neural-based Immersive Streaming System. (Joint work with RU)
- My research contains eXtended Reality, multimedia, and network systems.
- My works are collaborate with *Prof. Wei Tseng Ooi* from the National University of Singapore, *Prof. Yao Liu* from Rutgers University, and *Prof. Chun-Ying Huang* from National Yang-Ming Chiao Tung University.

Teaching Assistant in Introduction to Computer Networks Course, National   Fall 2024 & Fall 2023
Tsing Hua University – Hsinchu, Taiwan
- Supporting students in understanding fundamental course concepts, assignments, and lab work.
- Conducted tutorials, held office hours, and guided students, aiding their comprehension of networking principles and practical applications.
- Collaborated with course instructors in designing materials, assessments, and grading, ensuring a practical learning experience for students.

Student Cluster Competition Team Member, National Tsing Hua University –   2021 – 2022
Hsinchu, Taiwan
- The goal of this team is to train and select team members for the APAC HPC-AI Competition. APAC HPC-AI competition was about High-Performance Computing (HPC) and Artificial Intelligence (AI). The goal of this competition was handling the ever-growing demands for higher computation performance and the increase in the complexity of research problems.
- I worked on the research of Deep Learning Recommendation Model (DLRM) and figured out how to set up the environment and tools for it in supercomputer.

Competitions and Awards

ACM SIGCOMM Workshop on Emerging Multimedia System Best Paper Award,   2024
Sydney, Australia

ACM SIGCOMM Travel Grant, Sydney, Australia	2024
National Science and Technology Council Travel Grant, Ottawa, Canada	2023
Undergraduate Research Fellowship, Ministry of Science and Technology (MOST), Taiwan	2023
NTHU EE Undergraduate Project Competition, Honorable Mention	2022
APAC HPC-AI Competition 2021, Second Prize & Special Award	2021

Publications

[1] **Dynamic 6-DoF Volumetric Video Generation: Software Toolkit and Dataset**
Mufeng Zhu, *Yuan-Chun Sun*, Na Li, Jin Zhou, Songqing Chen, Cheng-Hsin Hsu, and Yao Liu
Proc. of IEEE International Workshop on Multimedia Signal Processing (MMSP'24)
West Lafayette, IN, October 2024

[2] **Will Neural 3D Object Representations be the Silver Bullets for Improving VR Experience in HMDs?**
Charlie Hsu, *Yuan-Chun Sun*, Kuan-Yu Lee, and Chun-Ying Huang
Proc. of IEEE International Conference on Multimedia Information Processing and Retrieval (MIPR'24)
San Jose, CA, August 2024

[3] **Mitigating Privacy Threats Without Degrading Visual Quality of VR Applications: Using Re-identification Attack as a Case Study**
Yu-Szu Wei, *Yuan-Chun Sun*, Shin-Yi Zheng, Hsun-Fu Hsu, Chun-Ying Huang, and Cheng-Hsin Hsu
Proc. of IEEE International Conference on Multimedia Information Processing and Retrieval (MIPR'24)
San Jose, CA, August 2024

[4] **Multi-frame Bitrate Allocation of Dynamic 3D Gaussian Splatting Streaming Over Dynamic Networks**
Yuan-Chun Sun, Yuang Shi, Wei Tsang Ooi, Chun-Ying Huang, and Cheng-Hsin Hsu
Proc. of ACM SIGCOMM Workshop on Emerging Multimedia Systems (EMS'24)
Sydney, Australia, August 2024 (Best Paper Award)

[5] **A Blind Streaming System for Multi-client Online 6-DoF View Touring**
Sheng-Ming Tang, *Yuan-Chun Sun*, and Cheng-Hsin Hsu
Proc. of ACM International Conference on Multimedia (MM'23)
Ottawa, Canada, October 2023

[6] **A Dynamic 3D Point Cloud Dataset for Immersive Applications**
Yuan-Chun Sun, I-Chun Huang, Yuang Shi, Wei Tsang Ooi, Chun-Ying Huang, and Cheng-Hsin Hsu
Proc. of ACM SIGMM Conference on Multimedia Systems (MMSys'23)
Vancouver, Canada, June 2023 (Dataset Paper)

[7] **Modeling Gamer Quality-of-Experience Using a Real Cloud VR Gaming Testbed**
Kuan-Yu Lee, Jia-Wei Fang, *Yuan-Chun Sun*, and Cheng-Hsin Hsu
Proc. of ACM International Workshop on IMmersive Mixed and Virtual Environment Systems (MMVE'23)
Vancouver, Canada, June 2023

[8] **Optimal Camera Placement for 6 Degree-of-Freedom Immersive Video Streaming Without Accessing 3D Scenes**
Sheng-Ming Tang, *Yuan-Chun Sun*, Kuan-Yu Lee, Jia-Wei Fang, Ching-Ting Wang, and Cheng-Hsin Hsu
Proc. of ACM Workshop on Interactive Extended Reality (IXR'22)
Lisbon, Portugal, October 2022

[9] **On Objective and Subjective Quality of 6DoF Synthesized Live Immersive Videos**
Yuan-Chun Sun, Sheng-Ming Tang, Ching-Ting Wang, and Cheng-Hsin Hsu
Proc. of ACM Workshop on Quality of Experience in Visual Multimedia Applications (QoEVMA'22)
Lisbon, Portugal, October 2022