

Yuan-Chun Sun (孫元駿)

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Educations

- National Tsing Hua University**, PhD in Information Systems and Applications 2024 – 2028 (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**, MS in Information Systems and Applications 2023 – 2024
- Transferred into the PhD program after two semesters due to exceptional academic performance
- National Tsing Hua University**, BS in Interdisciplinary Program of Electrical Engineering and Computer Science 2019 – 2023
- GPA: 3.74 / 4.3 (Transcript)

Awards

- Graduate Research Fellowship**, National Science and Technology Council 2024
- Principal Scholarship**, National Tsing Hua University 2024
- Best Paper Award**, ACM SIGCOMM Workshop on Emerging Multimedia System 2024
- Travel Grant (ACM SIGCOMM'24)**, ACM SIGCOMM 2024
- Travel Grant (ACM MM'24)**, National Science and Technology Council 2023
- Undergraduate Research Fellowship**, Ministry of Science and Technology (MOST) 2023
- Honorable Mention**, NTHU EE Undergraduate Project Competition 2022
- Second Prize & Special Award**, APAC HPC-AI Competition 2021
- Third Place**, Hackathon Junior 7th (Advanced group) 2021
- Most Feasibility Award**, Meichu Hackathon 2021

Publications

- [1] **TSLA: A DASH Streaming System for Dynamic Multi-Layer 3D Gaussian Splatting Scenes**
Yuan-Chun Sun, Yuang Shi, Cheng-Tse Lee, Mufeng Zhu, Wei Tsang Ooi, Yao Liu, Chun-Ying Huang, and Cheng-Hsin Hsu
Proc. of ACM SIGMM Conference on Multimedia Systems (MMSys'25)
Stellenbosch, South Africa, March 2025
- [2] **Optimally Planning Drone Trajectory to Capture a 3D Gaussian Splatting Object**
Cheng-Yuan Wu, *Yuan-Chun Sun*, Cheng-Tse Lee, and Cheng-Hsin Hsu
International Conference on Multimedia Modeling (MMM'25)
Nara, Japan, January 2025
- [3] **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
- [4] **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
- [5] **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

- [6] **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**)
- [7] **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
- [8] **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)
- [9] **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
- [10] **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
- [11] **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
- [12] **Composing Error Concealment Pipelines for Dynamic 3D Point Cloud Streaming**
Submitted to ACM Transactions on Multimedia Computing, Communications, and Applications (TOMM)
I-Chun Huang, Yuang Shi, *Yuan-Chun Sun*, Wei Tsang Ooi, Chun-Ying Huang and Cheng-Hsin Hsu
2025 (Under review)
- [13] **Interactive Immersive Streaming in Next-Generation Networks**
Submitted to Proc. of ACM SIGMM Conference on Multimedia Systems (MMSys'25)
Yuan-Chun Sun
2025 (Under review) (Doctoral Symposium)
- [14] **Joint Learning of Point Clouds and Motion Vectors for Volumetric Video**
Submitted to Proc. of ACM International Workshop on Immersive Mixed and Virtual Environment Systems (MMVE'25)
Cheng-Tse Lee, *Yuan-Chun Sun*, Yuang Shi, Mufeng Zhu, Wei Tsang Ooi, Yao Liu, Chun-Ying Huang, and Cheng-Hsin Hsu
2025 (Under review)

Experience

Research Assistant at Ambient Intelligence for Immersive Networked Systems Lab (AIINS), National Tsing Hua University – Hsinchu, Taiwan July 2021 – Present
Advisor: Prof. Cheng-Hsin Hsu

- Conducted extensive research in immersive multimedia systems, contributing to multiple projects:
 - Volumetric Video Streaming System under Dynamic Networks (Joint work with NUS, RU, and NYCU)
 - Enabling XR Cloud Gaming in 6G Cellular Network (Joint work with MediaTek)

- Mitigating Privacy Threat in VR Application (Joint work with NYCU)
- Optimal Camera Placement for 6-Degree-of-Freedom Multicast of 3D Scenes
- Spanned eXtended Reality, multi-model representations, multimedia application, and networked systems
- Collaborated 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 Tsing Hua University – Hsinchu, Taiwan Fall 2024 & Fall 2023

- Supported students in understanding fundamental concepts, assignments, and labs
- Led tutorials, held office hours, and guided students, to improve their comprehension of networking principles and practical applications
- Collaborated with course instructors in designing course materials, assessments, and grading, for a better learning experience

Student Cluster Competition Team, National Tsing Hua University – Hsinchu, Taiwan 2021 – 2022

- Participated in the school team for the APAC HPC-AI Competition, which is High-Performance Computing (HPC) and Artificial Intelligence (AI), leading by **Prof. Jerry Chou**; the competition tackles the ever-growing demands for higher computation performance and the increase in the complexity of research problems

Research Interests

Immersive Video Streaming, Virtual Reality (VR), Augmented Reality (AR), Multimedia Networking, and Wireless Networks

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