

Yu-Ju Tsai

Curriculum Vitae

✉ louis19950117@gmail.com
📄 <https://liagm.github.io/>

Education

- Ph.D. student **University of California, Merced**, CA, USA.
◦ 2022 - Present, Electrical Engineering and Computer Science (EECS)
◦ [Vision and Learning Lab](#)
◦ Advisor: Prof. Ming-Hsuan Yang
- Master of Science **National Taiwan University**, Taipei, Taiwan.
◦ 2017 - 2019, Computer Science and Information Engineering (CSIE)
◦ Advisor: Prof. Ming Ouhyoung, Yung-Yu Chuang
◦ Thesis: "*Estimate Disparity of Light Field Images by Deep Neural Network*"
◦ GPA: 4.26/4.30, Rank: 4/131
- Bachelor of Science **National Taiwan University**, Taipei, Taiwan.
◦ 2013 - 2017, Computer Science and Information Engineering (CSIE)
◦ GPA: 3.91/4.30

Publications

- Arxiv 2023 **Dual Associated Encoder for Face Restoration.**
Yu-Ju Tsai, Yu-Lun Liu, Lu Qi, Kelvin C.K. Chan, Ming-Hsuan Yang
Arxiv 2023 📄 [Paper](#)
- BMVC 2022 **SearchTrack: Multiple Object Tracking with Object-Customized Search and Motion-Aware Features.**
Zhong-Min Tsai, Yu-Ju Tsai, Chien-Yao Wang, Hong-Yuan Liao, Youn-Long Lin, and Yung-Yu Chuang
In Proceedings of the British Machine Vision Conference (BMVC 2022) 📄 [Paper](#) 🔗 [Code](#)
- AAAI 2020 **Attention-based View Selection Networks for Light-field Disparity Estimation.**
Yu-Ju Tsai, Yu-Lun Liu, Ming Ouhyoung, and Yung-Yu Chuang
In Proceedings of AAAI Conference on Artificial Intelligence (AAAI 2020) 📄 [Paper](#) 🔗 [Code](#)
- SIGGRAPH Asia 2017 **Affordable system for measuring motion-to-photon latency of virtual reality in mobile devices.**
Yu-Ju Tsai, Yu-Xiang Wang, and Ming Ouhyoung
In ACM SIGGRAPH Asia 2017 Posters (SA'17) 📄 [Paper](#)
- VRIC 2017 **Live Room Merger: A Real-Time Augmented Reality System for Merging Two Room Scenes.**
Chu-I Chao, Chien-Min Wang, Hsuan-Chi Kuo, Liang-Chi Tseng, Shih-Kai Lin, Yu-Ju Tsai, Ching-Chi Lin, and Da-Fang Chang
In Proceedings of the Virtual Reality International Conference - Laval Virtual 2017 (VRIC '17)
- SIGGRAPH 2016 **A modified wheatstone-style head-mounted display prototype for narrow field-of-view video see-through augmented reality.**
Pei-Hsuan Tsai, Yu-Hsuan Huang, Yu-Ju Tsai, Hao-Yu Chang, Masatoshi Chang-Ogimoto, and Ming Ouhyoung
In ACM SIGGRAPH 2016 Posters (SIGGRAPH '16) 📄 [Paper](#)
- SIGGRAPH 2016 **ThirdEye: a coaxial feature tracking system for stereoscopic video see-through augmented reality.**
Yu-Xiang Wang, Yu-Ju Tsai, Yu-Hsuan Huang, Wan-Ling Yang, Tzu-Chieh Yu, Yu-Kai Chiu, and Ming Ouhyoung
In ACM SIGGRAPH 2016 Posters (SIGGRAPH '16) 📄 [Paper](#)
Student Research Competition Bronze Prize

Research and Work Experiences

- Applied Scientist Intern **CoRo Team, Amazon**, Bellevue, USA.
 May. 2023 - Aug. 2023
 Mentors: Jingjing Zheng, Min Sun
Project: Panorama Room Layout Estimation
 ○ We propose a method to generate two distinct layout types from a single panorama and solve the ambiguity issue inside the panorama datasets.
- Research Assistant **Communications and Multimedia Lab, National Taiwan University**, Taipei, Taiwan.
 Sep. 2019 - Jul. 2022
 Advisor: Yung-Yu Chuang
Project: Multi-Object Tracking and Segmentation (MOTS)
 ○ Combined long-term point-based object representation and position-aware motion model guided by Kalman filter to solve tracking problem.
Project: Robotic grasping
 ○ Developed a pipeline with object segmentation, grasping, and matching for robotic pick-and-place.
Project: Light Field Disparity Estimation
 ○ Proposed a network with attention module to utilize all views of light field to estimate disparity maps and reach top performance on the benchmark.
 ○ Paper is accepted to **AAAI 2020**.
- Research Intern **VIVE R&D Team, HTC**, Taipei, Taiwan.
 May. 2017 - Dec. 2018
Project: Indoor Fisheye Camera Depth Estimation and Calibration
- Research Intern **Institute of Information Science, Academia Sinica**, Taipei, Taiwan.
 Jul. 2016 - Aug. 2016
 Advisor: Jan-Jan Wu
Project: Remote Augmented Reality Communication
 ○ Developed a framework to merge two remote room by replacing target scene with 360 live video and displaying in a VR head-mounted device.
 ○ Paper is accepted to **VRIC 2017**.
- Undergraduate Research **Communications and Multimedia Lab, National Taiwan University**, Taipei, Taiwan.
 Sep. 2015 - Jun. 2017
 Advisor: Ming Ouhyoung
Project: Latency of Virtual Reality
 ○ Proposed a low cost and easy built-up framework to measure motion-to-photon latency of virtual reality applications in mobile devices with acceptable accuracy.
 ○ Poster is accepted to **SIGGRAPH Asia 2017**.
Project: Video See-Through Augmented Reality
 ○ Proposed a coaxial camera system with beam-splitter lens module to solve tracking problem in stereoscopic video see-through augmented reality.
 ○ Built a narrow field-of-view(FoV) display with higher pixel density for near-field video see-through augmented reality applications.
 ○ Posters are accepted to **SIGGRAPH 2016**.

Professional Activities

- Journal Reviewer ○ IEEE Transactions on Image Processing (**TIP**)
- Conference Reviewer ○ ACCV, CVPR
- Student Volunteer ○ ACM SIGGRAPH Asia 2016, 2017, 2019

Honors and Awards

- Award **Outstanding Reviewer**, The 16th Asian Conference on Computer Vision, 2022.
- Award **Chancellor's Graduate Fellowship**, University of California, Merced, 2022.
- Award **Honorary Member**, The Phi Tau Phi Scholastic Honor Society of the Republic of China, 2019.

Top 3% of graduated students

Award **Excellent Teaching Assistants Awards**, CSIE, National Taiwan University, Apr. 2019.
For the course "*Neural Networks*" (Fall 2018)

Award **Presidential Awards**, CSIE, National Taiwan University, Jan. 2017, Jun. 2017.
Top 5% of students in one semester

Award **Bronze Prize**, ACM SIGGRAPH Student Research Competition, 2016.
For our work "*ThirdEye: a coaxial feature tracking system for stereoscopic video see-through augmented reality*"

Teaching Experiences

Teaching Assistant **CSIE, National Taiwan University**, Taipei, Taiwan.
◦ CSIE 5052: Neural Networks (Fall 2018)
◦ CSIE 7633: Virtual Reality (Spring 2018)

Technical Skills

Programming ◦ C/C++, Python

Toolbox / Software ◦ Pytorch, Matlab, OpenCV

References

Ph.D. Advisor **Ming-Hsuan Yang**, *Professor*, University of California, Merced, USA.
✉ mhyang@ucmerced.edu 🔗 [Homepage](#)

M.S. Advisor **Ming Ouhyoung**, *Adjunct Professor*, National Taiwan University, Taiwan.
✉ ming@csie.ntu.edu.tw 🔗 [Homepage](#)

Research Mentor **Yung-Yu Chuang**, *Professor*, National Taiwan University, Taiwan.
✉ cyy@csie.ntu.edu.tw 🔗 [Homepage](#)

Research Mentor **Min Sun**, *Associate Professor*, National Tsing Hua University, Taiwan.
✉ aliensunmin@gmail.com 🔗 [Homepage](#)