

# Yu-Ju Tsai

## Curriculum Vitae

✉ [louis19950117@gmail.com](mailto: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

- Under review **No More Ambiguity in 360° Room Layout via Bi-Layout Estimation.**  
Yu-Ju Tsai, Jin Cheng Jhang, Jingjing Zheng, Wei Wang, Albert Y. C. Chen, Min Sun, Cheng-Hao Kuo, Ming-Hsuan Yang  
Under review
- Arxiv 2023 **Effective Adapter for Face Recognition in the Wild.**  
Yunhao Liu, Lu Qi, Yu-Ju Tsai, Xiangtai Li, Kelvin C.K. Chan, Ming-Hsuan Yang  
Arxiv 2023 📄 [Paper](#) 📁 [Project](#)
- ICLR 2024 **Dual Associated Encoder for Face Restoration.**  
Yu-Ju Tsai, Yu-Lun Liu, Lu Qi, Kelvin C.K. Chan, Ming-Hsuan Yang  
In Proceedings of International Conference on Learning Representations (ICLR 2024) 📄 [Paper](#) 📁 [Project](#)
- 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**

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## Research and Work Experiences

Applied Scientist Intern **CoRo Team, Amazon**, Bellevue, USA.

May. 2023 - Aug. 2023

Mentors: Jinging 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**.

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## Professional Activities

Journal Reviewer ◦ IEEE Transactions on Image Processing (**TIP**)

Conference Reviewer ◦ ACCV, CVPR

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## 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*"

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## Teaching Experiences

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

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## Technical Skills

- Programming ○ C/C++, Python
- Toolbox / Software ○ Pytorch, Matlab, OpenCV

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## References

- Ph.D. Advisor **Ming-Hsuan Yang**, *Professor*, University of California, Merced, USA.  
✉ [mhyang@ucmerced.edu](mailto:mhyang@ucmerced.edu) 🔗 [Homepage](#)
- M.S. Advisor **Ming Ouhyoung**, *Adjunct Professor*, National Taiwan University, Taiwan.  
✉ [ming@csie.ntu.edu.tw](mailto:ming@csie.ntu.edu.tw) 🔗 [Homepage](#)
- Research Mentor **Yung-Yu Chuang**, *Professor*, National Taiwan University, Taiwan.  
✉ [cyy@csie.ntu.edu.tw](mailto:cyy@csie.ntu.edu.tw) 🔗 [Homepage](#)
- Research Mentor **Min Sun**, *Associate Professor*, National Tsing Hua University, Taiwan.  
✉ [aliensunmin@gmail.com](mailto:aliensunmin@gmail.com) 🔗 [Homepage](#)