Kuan-Wei Tseng

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RESEARCH INTEREST

3D Computer Vision, Image Processing, Multimedia (AR/VR), Robotics

EDUCATION

M.S., Department of Computer Science, Tokyo Institute of Technology (Tokyo Tech) Since 2022

B.S., Department of Mechanical Engineering, National Taiwan University (NTU) 2016–2020

EXPERIENCE

Research Assistant, National Taiwan University 2019–Now
Supervised by Prof. Chu-Song Chen and Prof. Yi-Ping Hung.
- **Image Processing**. Designed and implemented ArtNV, a stylized novel view synthesis pipeline that generate spatially consistent novel views for emerging 3D display applications.
- **Computer Vision**. Contributed to Deep3D, an learning-based video stabilization algorithm that first leveraged self-supervised learning of depth and pose to model and smooth camera motion.
- **Virtual Reality**. Analyzed user experience on multisensory feedback. Developed an olfactory display system that exhausts scented gases by subwoofers to enhance immersive VR experience.

Teaching Assistant, National Taiwan University Spring 2021–Now
- CSIE 4004 Computer Science and Information Technology (II)
- CSIE 5079 Pattern Classification and Analysis
- CSIE 5429 3D Computer Vision with Deep Learning Applications

AWARDS

Best Student Paper Award, ACM International Conference on Multimedia (MM) 2021

Best Paper Award, IPPR Conference on Computer Vision, Graphics, and Image Processing 2020

JASSO Scholarship, Nagoya University Short-Term Japanese Language Program 2018

COMPETENCES

Languages. Mandarin Chinese (*native*), English (*fluent*, TOEFL 104), Japanese (*fluent*, JLPT N1)

Programming Languages. Python, C++, MATLAB, SQL, HTML

Library, Software, and Tools. PyTorch, OpenCV, ROS, Git, Latex, AutoCAD, Inventor

SELECTED PUBLICATIONS

[1] **Kuan-Wei Tseng**, Yao-Chih Lee, Chu-Song Chen, "Artistic Style Novel View Synthesis Based on A Single Image", in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR) Workshops*, 2022. (Accepted) ⚭

[2] You-Yang Hu, Yao-Fu Jan, **Kuan-Wei Tseng**, You-Shin Tsai, Hung-Ming Sung, Jin-Yao Lin, Yi-Ping Hung, "aBio: Active Bi-Olfactory Display Using Subwoofers for Virtual Reality", in *Proceedings of the 29th ACM International Conference on Multimedia (MM)*, 2021. (Oral Paper; Best Student Paper) ⚭

[3] Yao-Chih Lee, **Kuan-Wei Tseng**, Yu-Ta Chen, Chien-Cheng Chen, Chu-Song Chen, Yi-Ping Hung, "3D Video Stabilization with Depth Estimation by CNN-based Optimization", in *Proceedings of the IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)*, 2021. ⚭

[4] Yu-Ta Chen, **Kuan-Wei Tseng**, Yao-Chih Lee, Chun-Yu Chen, Yi-Ping Hung, "PixStabNet: Fast Multi-Scale Deep Online Video Stabilization with Pixel-Based Warping", in *Proceedings of the IEEE International Conference on Image Processing (ICIP)*, 2021. ⚭

[5] Yao-Fu Juan, **Kuan-Wei Tseng**, Peng-Yuan Kao and Yi-Ping Hung, "Augmented Tai-Chi Chuan Practice Tool with Pose Evaluation", in *Proceedings of the IEEE International Conference on Multimedia Information Processing and Retrieval (MIPR)*, 2021. (Oral Paper) ⚭

[6] Peng-Yuan Kao, **Kuan-Wei Tseng**, Tian-Yi Shen, Yan-Bin Song, Kuan-Wen Chen, Shih-Wei Hu, Sheng-Wen Shih, and Yi-Ping Hung, "Camera Ego-Positioning Using Sensor Fusion and Complementary Method", in *Pattern Recognition. ICPR International Workshops and Challenges*, 2021. ⚭

[7] **Kuan-Wei Tseng**, Meng-Wei Hsu, Peng-Yuan Kao and Yi-Ping Hung, "Influence of IMU Quality on Optimization-Based Visual Inertial Odometry", in *IPPR Conference on Computer Vision, Graphics, and Image Processing (CVGIP)*, 2020. (Presentation) ⚭