Yao-Chih Lee
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Computer Vision and Deep Learning · 3D Vision and Video Synthesis

Educations

09.2022 - Present Doctor of Philosophy Computer Science	**University of Maryland College Park** **Advisor** Jia-Bin Huang **GPA** 4.0 / 4.0
09.2018 - 06.2020 Master of Science Computer Science and Information Engineering	**National Taiwan University** **Advisor** Yi-Ping Hung **Thesis** *3D Video Stabilization with Depth Estimation by CNN-based Optimization* (in CVPR 2021) **Committee** Yung-Yu Chuang, Yu-Chiang Frank Wang, Chu-Song Chen, Kuan-Wen Chen **GPA** 4.24 / 4.3
09.2014 - 06.2018 Bachelor of Science Computer Science	**National Chiao Tung University** (now National Yang Ming Chiao Tung University) **Major** Network and Multimedia Program **GPA** 4.14 / 4.3 (Rank: 1st / 50)

Work Experience

06.2024 - 10.2024 Student Researcher	**Google** in Cambridge, MA
05.2023 - 11.2023 Research Intern	**Adobe** in San Jose, CA *Investigated a new algorithm of fast novel view synthesis for casual videos (ECCV 2024)*
09.2020 - 03.2022 Research Assistant	**Academia Sinica** in Taipei, Taiwan *Investigated an image restoration algorithm for medical CT images and other projects related to 3D computer vision.*
09.2018 - 06.2020 Graduate Research Assistant	**National Taiwan University** in Taipei, Taiwan *Investigated video stabilization algorithms with deep learning approaches (CVPR 2021 and ICIP 2021). Collaborated with MediaTek, Inc.*
08.2016 - 06.2018 Undergraduate Research Assistant	**National Chiao Tung University** in Hsinchu, Taiwan *Developed a vision-based drone autopilot system and investigated learning-based local features for SLAM systems.*

Publications

Featured

2024 ECCV	**Fast View Synthesis of Casual Videos with Soup-of-Planes** **Yao-Chih Lee**, Zhoutong Zhang, Kevin Blackburn-Matzen, Simon Niklaus, Jianming Zhang, Jia-Bin Huang, and Feng Liu webpage · pdf
2023 CVPR	**Shape-aware Text-driven Layered Video Editing** **Yao-Chih Lee**, Ji-Ze Genevieve Jang, Yi-Ting Chen, Elizabeth Qiu, Jia-Bin Huang webpage · pdf
2021 CVPR	**3D Video Stabilization with Depth Estimation by CNN-based Optimization** **Yao-Chih Lee**, Kuan-Wei Tseng, Yu-Ta Chen, Chien-Cheng Chen, Chu-Song Chen and Yi-Ping Hung webpage · pdf

Others and preprints

2024 arXiv preprint	**VividDream: Generating 3D Scene with Ambient Dynamics** **Yao-Chih Lee**, Yi-Ting Chen, Andrew Wang, Ting-Hsuan Liao, Brandon Y. Feng, Jia-Bin Huang *webpage · pdf*
2023 CAI	**Improved Contrastive Unpaired Translation for Metal Artifacts Reduction in Nasopharyngeal CT Images** Yu-Hsing Hsieh, Jia-Da Li, **Yao-Chih Lee**, Chu-Song Chen, LiFu Wu, and Skye H Cheng *IEEE Conference on Artificial Intelligence · pdf*
2023 arXiv preprint	**Text-driven Visual Synthesis with Latent Diffusion Prior** Ting-Hsuan Liao, Songwei Ge, Yiran Xu, **Yao-Chih Lee**, Badour AlBahar, Jia-Bin Huang *webpage · pdf*
2022 CVPRW	**Artistic Style Novel View Synthesis Based on A Single Image** Kuan-Wei Tseng, **Yao-Chih Lee**, Chu-Song Chen *CVPR Workshop · webpage · pdf*
2022 arXiv preprint	**Globally Consistent Video Depth and Pose Estimation with Efficiency** **Yao-Chih Lee**, Kuan-Wei Tseng, Guan-Sheng Chen, Chu-Song Chen *pdf · code*
2021 ICIP	**PixStabNet: Fast Multi-Scale Deep Online Video Stabilization with Pixel-based Warping** Yu-Ta Chen, Kuan-Wei Tseng, **Yao-Chih Lee**, Chun-Yu Chen, Yi-Ping Hung *IEEE International Conference on Image Processing · pdf*
2021 CVPRW	**Part-aware Measurement for Robust Multi-View Multi-Human 3D Pose Estimation and Tracking** Hau Chu, Jia-Hong Lee, **Yao-Chih Lee**, Ching-Hsien Hsu, Jia-Da Li, Chu-Song Chen *CVPR Workshop · pdf*
2018 TAICHI	**A Design of Vision-based Navigation System for the Visually Impaired** Ping-Jung Duh, Yu-Cheng Sung, **Yao-Chih Lee**, Kuan-Wen Chen, Liang-Yu Fan Chiang *The Conference of Taiwan Computer-Human Interaction (TAICHI)*
2017 TAICHI	**A UAV Autopilot System for Sports Player Tracking** Yu-Cheng Sung, **Yao-Chih Lee**, Sarah Wang, Wei-Ting Hu, Kuan-Wen Chen *The Conference of Taiwan Computer-Human Interaction (TAICHI)*

Honors and Awards

09.2014 - 06.2017 Award	**Academic Achievement Awards** at NCTU *Awarded 4 times to top 5% ranking in the semesters.*
05.2017 Award	**Undergraduate Project Excellence Award** at NCTU *Awarded to the project of a visual-based UAV autopilot system for sports player tracking.*
01.2017 Award	**Core Course Award** at NCTU *Awarded to the top 3 ranking in the core course, Operating System.*

Service

2024	**Reviewer** *CVPR · ECCV · ACCV · ACM TOMM*
2023	**Reviewer** *CVPR · ICCV · SIGGRAPH Asia · Computer Vision and Image Understanding*
2022	**Reviewer** *Pattern Recognition.*
2021	**Reviewer** *Pattern Recognition.*

Teaching

2024 Teaching Assistant	**Computer Vision** at UMD CMSC426
2023 Teaching Assistant	**Introduction to Data Science** at UMD CMSC320
2022 Teaching Assistant	**Introduction to Artificial Intelligence** at UMD CMSC421
2021 Teaching Assistant	**3D Computer Vision with Deep Learning Applications** at NTU CSIE5429
2019 Teaching Assistant	**Digital Image Processing** at NTU CSIE5612 **Probability** at NTU CSIE2121
2018 Teaching Assistant	**Computer Vision for UAV Autopilot** at NCTU DCP1249