

Cho-Ying Wu

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RESEARCH INTERESTS

3D Vision and Graphics, Depth Sensing, 3D Face Modeling

EDUCATION

University of Southern California (USC)

Aug 2018 – present

PhD Candidate, Department of Computer Science

Advised by Prof. Ulrich Neumann

National Taiwan University (NTU)

Aug 2015 – Jun 2017

M.S. in *Communication Engineering*

Advised by Prof. Jian-Jiun Ding

Overall GPA : 4.00/4.00 (4.30/4.30), ranked 1st out of total 121 students

Thesis : *Sparse and low-rank model for occluded face recognition and nonconvex optimization*

National Taiwan University (NTU)

Sept 2011 – Jun 2015

B.S. in *Electrical Engineering, double major in Law, group of Judicial Administration*

PUBLICATION

- **Cho-Ying Wu**, Jialiang Wang, Michael Hall, Ulrich Neumann, Shuochen Su, “Toward Practical Self-Supervised Monocular Indoor Depth Estimation”, under review of *CVPR* 2022.
- **Cho-Ying Wu**, Chin-Cheng Hsu, Ulrich Neumann, “Voice2Mesh: Cross-Modal 3D Face Model Generation from Voices”, under review of *CVPR* 2022.
- **Cho-Ying Wu**, Qiangeng Xu, and U. Neumann, “Accurate Facial Geometry Prediction: 3D Facial Alignment, Orientation Estimation, and 3D Face models,” *3D Vision (3DV)* 2021.
- **Cho-Ying Wu** and U. Neumann, “Scene Completeness-Aware Lidar Depth Completion for Driving Scenario,” *International Conference on Acoustics, Speech, & Signal Processing (ICASSP)* 2021.
- **Cho-Ying Wu**, X. Hu, M. Happold, and U. Neumann, “Geometry-Aware Instance Segmentation with Disparity maps,” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR) 2020 Scalability on Autonomous Driving*.
- Qiangeng Xu, Xudong Sun, **Cho-Ying Wu**, Panqu Wang, Ulrich Neumann, “Grid-GCN for Fast and Scalable Point Cloud Learning” *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)* 2020.
- **Cho-Ying Wu**, Y. Zhong, S. You, and U. Neumann, “Deep RGB-D Canonical Correlation Analysis For Sparse Depth Completion,” *Conference Neural Information Processing Systems, (NeurIPS)* 2019.
- **Cho-Ying Wu** and U. Neumann, “Iterative L0 Smoothing and Edge Enhancing for Building Outline Abstraction,” *IEEE International Conference on Image Processing (ICIP)* 2019.
- **Cho-Ying Wu** and U. Neumann, Efficient Multi-Domain Dictionary Learning with GANs,” *IEEE Global Signal*

Information Processing (*GlobalSIP*) 2019, Oral.

- **Cho-Ying Wu** and J. J. Ding, "Occluded face recognition using low-rank regression with generalized gradient direction," *Pattern Recognition (PR)*, vol. 80, pp. 256–268, 2018. (Impact Factor: 7.7)
- **Cho-Ying Wu** and J. J. Ding, "Occlusion pattern-based dictionary for robust face recognition," *IEEE International Conference on Multimedia and Expo (ICME)*, 2016.

INTERNSHIPS

Facebook Reality Labs, Redmond, WA	May 2021 – Aug 2021
- 3D Depth Sensing for AR/VR use cases.	
Amazon Lab126, Bellevue, WA	May 2020 - Aug 2020
- 3D Facial Alignments, Face Orientation Estimation, and 3D Face Reconstruction.	
- State-of-the-art performance on all these three tasks.	
Argo AI, Palo Alto, CA	May 2019 - Aug 2019
- Computer vision intern for autonomous driving	
- Sensor fusion for instance segmentation. 2D, 2.5D, and 3D information fusion.	

HONORS AND SCHOLARSHIPS

• Second Prize of Young Author Best Thesis Award , Chinese Inst. of EECS	Oct 2017
- Best and most renowned Master thesis award on EECS in Taiwan	
• Honorable Mention Award of Master Thesis Award , Inst. of Inf. & Computation Mach.	Feb 2018
- Best Master thesis award on CS in Taiwan	

ACADEMIC SERVICES

• Teaching Assistant	
- Computer Graphics, University of Southern California	Fall 19, Fall 20, Fall 21
- Database Systems, University of Southern California	Spring 20, Spring 21
- Data Structures and Object Oriented Design, University of Southern California	Spring 19
- Differential Equations, Advanced Signal Processing, National Taiwan University	Spring and Fall 16
• Reviewer: CVPR22, CVPR21, ICCV21, NeurIPS21, ICIP19, ICIP20, ICIP21, IEEE Access	

SKILLS

Programming skill: Python, C/C++, Matlab, CUDA

Tools and Libraries: PyTorch, TensorFlow, AWS

Pass Attorney of Higher Exam in Taiwan (8% pass rate), 2017