Cho-Ying Wu

choyingw@usc.edu | (213) 712-2617 | www-scf.usc.edu/~choyingw

RESEARCH INTERESTS

Computer Vision, Image Processing, Machine Learning, Optimization, Compressive Sensing

EDUCATION

University of Southern California Aug. 2018 – present
Ph.D., 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*
Overall GPA : 3.73/4.00 GPA excludes Law school courses : 3.77/4.00

PUBLICATION

[1] **C. Y. Wu**, Y. Zhong, S. You, and U. Neumann, "Deep RGB-D Canonical Correlation Analysis For Sparse Depth Completion," NeurIPS 2019.
[2] **C. Y. Wu** and U. Neumann, "Iterative L0 Smoothing and Edge Enhancing for Building Outline Abstraction," *IEEE International Conference on Image Processing* (ICIP) 2019.
[3] **C. Y. Wu** and U. Neumann, Efficient Multi-Domain Dictionary Learning with GANs," IEEE Global Signal Information Processing (GlobalSIP).
[4] **C. Y. Wu** and J. J. Ding, "Nonconvex approach for sparse and low-rank constrained models with dual momentum," arXiv, preprint.
[5] **C. Y. 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: 5.9)
[6] **C. Y. Wu** and J. J. Ding, "A fast nonconvex regularizer for low-rank matrix completion," *IEEE Asia-Pacific Signal and Information Processing Association* (APSIPA), Dec. 2017.
[7] **C. Y. Wu** and J. J. Ding, "Occlusion pattern-based dictionary for robust face recognition," *IEEE International Conference on Multimedia and Expo* (ICME), Seattle, USA, Jul. 2016.

SELECTED PROJECTS OTHER THAN PUBLICATIONS

- **CORE 3D** in Cooperation with Vision System Inc. (VSI) Aug. 2018 – Jan 2019, USC

- 3D modeling from single digital elevation map (DEM) of city view.
- 3D modeling refinements and rectifications. Shape inpainting with GANs.
- Rooftop fine structure detection with YOLO and 3D modeling.
- Depth map/ DEM map super resolution with neural network joint filtering.
- RGB building image to sketch with smoothing-enhancing iterative filtering.

- Stereo Vision for MaskRCNN in Argo AI May 2019 – Aug. 2019, Argo AI

INTERNSHIPS

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.

Inst. for Information Industry, Taipei, Taiwan Sept. 2015 – Nov. 2015

- Commodity retrieval from single image
- Foot arch measurement and classification using single Kinect depth camera with cushions.

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
- **GPA Ranked #1** (1/121), National Taiwan University, Jun. 2017
- **Honor Student Member Award,** Phi Tau Phi Scholastic Honor Society of R.O.C. Jun. 2017
- Only 1 graduating student (1/121), National Taiwan University
- **Graduate Student Scholarship**, National Taiwan University, 2016 – 2017
- Top 30% students in one semester
- **Student Travel Grant for ICME**, Ministry of Science and Technology, R.O.C, Aug. 2016

ACADEMIC SERVICES

- **Teaching Assistant**
- Data Structures and Object Oriented Design, University of Southern California Spring, 2019
- Advanced Digital Signal Processing, National Taiwan University Spring, 2017
- Differential Equation, National Taiwan University Fall, 2016
- **Reviewer**
- Journal: ICIP2019, Biomedical Research, Biostatistics and Biometrics Applications

RELATED SKILL

Programming skill: Python, C/C++, Matlab, Java, R, JavaScript, PHP, MySQL

Tools and Libraries: PyTorch, TensorFlow, Keras, Caffe, OpenCV, Scikit-learn