

# Tsung-Han (Patrick) Wu

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## Education

### Ph.D. in Computer Science

Aug. 2023 – Present

University of California, Berkeley

- **GPA:** 4.0/4.0 (up to date)
- **Advisor:** Prof. Trevor Darrell, Prof. Joseph E Gonzalez
- **Lab Affiliation:** BAIR, Sky Computing Lab

### M.S. in Computer Science

Sep. 2020 – Jun. 2022

National Taiwan University (NTU)

- **GPA:** 4.2/4.3 [Transcript]
- **Advisor:** Prof. Winston H. Hsu
- **Lab Affiliation:** Communication and Multimedia Lab (CMLab)
- **Honors:** 2021 Foxconn Technology Award, 2022 IPPR Outstanding MS Thesis Award
- **MS Thesis:** Active Learning for Semantic Segmentation: Region Diversity and Dynamic Domain Density

### B.S. in Computer Science

Sep. 2016 – Jun. 2020

National Taiwan University (NTU)

- **GPA:** overall: 4.18/4.3, CS-related: 4.24/4.3, graduate ranking: 6/117 (5%) [Transcript]
- **Honors:** Dean's List Award \* 3 (F'16, S'17, F'19)

## Research Interests

- **Post-2023 Focus:** In the post-ChatGPT era, my research focuses on **analyzing the limitations and exploring the zero-shot applications of LLMs / LMMs**, as the advanced capabilities of large pre-trained models have significantly reduced the traditional labeling burden.
- **Pre-2023 Endeavors:** My earlier research was dedicated to **creating trustworthy visual applications with low-cost sensors and require minimal labeling** in real-world scenarios.

## Selected Publications [Google Scholar Page]

### Preprints

- [1] **Tsung-Han Wu\***, Long Lian\*, Joseph E Gonzalez, Boyi Li, Trevor Darrell. "Self-correcting LLM-controlled Diffusion Models".
- [2] **Tsung-Han Wu\***, Giscard Biamby\*, David Chan, Lisa Dunlap, Ritwik Gupta, Xudong Wang, Joseph E Gonzalez, Trevor Darrell. "See, Say, and Segment: Teaching LMMs to Overcome False Premises".

### Conference Papers

- [3] Tsung-Lin Tsou, **Tsung-Han Wu**, Winston H Hsu. "WLST: Weak Labels Guided Self-training for Weakly-supervised Domain Adaptation on 3D Object Detection". **ICRA** 2024.
- [4] **Tsung-Han Wu**, Yi-Syuan Liou, Shao-Ji Yuan, Hsin-Ying Lee, Tung-I Chen, Kuan-Chih Huang, Winston H Hsu. "D2ADA: Dynamic Density-aware Active Domain Adaptation for Semantic Segmentation". **ECCV** 2022.
- [5] **Tsung-Han Wu**, Yueh-Cheng Liu, Yu-Kai Huang, Hsin-Ying Lee, Hung-Ting Su, Ping-Chia Huang, Winston H Hsu. "ReDAL: Region-based and Diversity-aware Active Learning for Point Cloud Semantic Segmentation". **ICCV** 2021.
- [6] Kuan-Chih Huang, **Tsung-Han Wu**, Hung-Ting Su, Winston H Hsu. "MonoDTR: Monocular 3D Object Detection with Depth-Aware Transformer". **CVPR** 2022.
- [7] Yu-Kai Huang, Yueh-Cheng Liu, **Tsung-Han Wu**, Hung-Ting Su, Yu-Cheng Chang, Tsung-Lin Tsou, Yu-An Wang, Winston H Hsu. "S3: Learnable Sparse Signal Supersampling for Guided Depth Estimation". **CVPR** 2021.

## Workshop Papers

- [8] **Tsung-Han Wu**, Hung-Ting Su, Shang-Tse Chen, Winston H Hsu. "Fair Robust Active Learning by Joint Inconsistency". **ICCVW** 2023.
- [9] Yu-Kai Huang\*, **Tsung-Han Wu\***, Yueh-Cheng Liu, Winston H Hsu. "Indoor Depth Completion with Boundary Consistency and Self-Attention". **ICCVW** 2019. (\* indicates equal contribution)

## Teaching Experience

### Teaching Assistant

2019, 2020 Spring

CS2311: Network Administration and System Administration, NTU

- **Lab Lecturer:** Teach shell script, system partition, file system and Linux kernel. Develop two programming assignments. Won the **Best Teaching Assistant Awards** in the EECS department. (2019 Spring)
- **Head of TAs:** Assist in course syllabus planning and lead the TA team to complete all in-class lab teaching, assignments, and exams. (2020 Spring)

### Teaching Assistant

2019 Fall

EE5184: Machine Learning, NTU

- Develop two machine learning programming assignments on the Kaggle platform. Design a set of hand-written homework and several problems in the final exam.

## Work Experience

### Network and System Administrator

Apr. 2021 – Mar. 2022

Communication and Multimedia Lab (CMLab), NTU

- Maintain all networking services in the lab, including switches, wireless access points, and a DHCP server.
- Manage 14 GPU servers, web services, and account systems in the lab. Automate data backup and package upgrade with open-source tools.

### System Administrator [\[Certificate Link\]](#)

Feb. 2018 – Jun. 2020

Department of Computer Science and Information Engineering (CSIE), NTU

Supervisor: Prof. Hsin-Mu Tsai

- **Head of Mail Services:** Maintain mail servers for all students, and faculties in the department. Automate system deployment with open-source tools. (2018 – 2019)
- **SysAdmin Team Leader:** Lead the team to improve the backup and monitoring services. Plan and execute the data center relocation project of the CS department. (2019 – 2020)

### Data Scientist Intern

Jul. 2019 – Aug. 2019

ASUS Inc., AICS Team

- Develop a denoising and rectification toolkit to boost OCR performance on printed paper.
- Implement an object detection model on private datasets.

## Awards and Service

**Conference & Journal Reviewers**, at CVPR, ECCV, ICCV, BMVC, ICMR, TMM

Apr. 2021 – Present

**IPPR Outstanding MS Thesis Award** (Top 3 Computer Vision Master Thesis in Taiwan)

Aug. 2022

**Foxconn Technology Award** (Top 19 applied students in Taiwan, 250K NTD scholarship)

Dec. 2021

**Best Teaching Assistant Awards**, at NTU EECS

Spring'19

**Dean's List Award**, at NTU CSIE (For top 5% students); 3x Recipient

Fall'16, Spring'17, Fall'19

## Skills

**Languages:** Experienced in C, Python and capable of C++. Fluent in Tensorflow, PyTorch and Scikit-Learn.

**System administration:** Git, Linux, Ansible, QEMU-KVM and Docker.