

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 minimal labeling burden** in real-world scenarios.

Selected Publications [Google Scholar Page]

Preprints

- [1] **Tsung-Han Wu**, Joseph E. Gonzalez, Trevor Darrell, David M. Chan. "CLAIR-A: Leveraging Large Language Models to Judge Audio Captions".

Conference Papers

- [2] **Tsung-Han Wu**, Giscard Biamby, Jerome Quenum, Ritwik Gupta, Joseph E. Gonzalez, Trevor Darrell, David M. Chan. "Visual Haystacks: A Vision-Centric Needle-In-A-Haystack Benchmark". **ICLR** 2025.
- [3] **Tsung-Han Wu***, Giscard Biamby*, David M. Chan, Lisa Dunlap, Ritwik Gupta, Xudong Wang, Joseph E. Gonzalez, Trevor Darrell. "See, Say, and Segment: Teaching LMMs to Overcome False Premises". **CVPR** 2024.
- [4] **Tsung-Han Wu***, Long Lian*, Joseph E. Gonzalez, Boyi Li, Trevor Darrell. "Self-correcting LLM-controlled Diffusion Models". **CVPR** 2024.
- [5] **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.
- [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] **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.

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

Research Scientist Intern

May. 2024 – Aug. 2024

FAIR, Meta Inc.

Supervisor: Prof. Kate Saenko

- Develop an automatic and effective data mining framework for fine-grained segmentation tasks.

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

AICS Team, ASUS Inc.

- 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.