Tsung-Han Wu (吳宗翰)

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Education

National Taiwan University **Taipei, Taiwan**
M.S. in Computer Science 2020–2022
Laboratory: Communications and Multimedia Laboratory (CMLab), Advisor: Prof. Winston H. Hsu
Thesis: Active Learning for Semantic Segmentation: Region Diversity and Dynamic Domain Density [PDF]
– Outstanding MS Thesis Award from IPPR, Computer Vision and Graphic Image Processing, 2022 [Link]

National Taiwan University **Taipei, Taiwan**
B.S. in Computer Science 2016–2020
GPA: overall: 4.18, major: 4.24, graduate ranking: 6/117 (5%)
Honors: Dean's List Award * 3 (F'16, S'17, F'19)
Activities: Academic Department in Student Association in NTU CS (Members in 2017, Leader in 2018)

Research Experiences

Research Assistant **National Taiwan University**
Collaborator: Prof. Shang-Tse Chen and Prof. Winston H. Hsu Aug. 2022–Present
– Researched on reaching **Fairness and Adversarial Robustness** with limited labeled data.

Graduate Researcher **National Taiwan University**
Advisor: Prof. Winston H. Hsu Sep. 2020–Jul. 2022
– Researched on **3D Active Learning** to reduce 20x labeling efforts on point cloud semantic segmentation. ICCV'21
– Researched on **Monocular 3D Object Detection** to boost the performance with depth guidance. CVPR'22
– Researched on **Active Domain Adaptation** to reduce 20x annotations on cross-domain segmentation. ECCV'22

Undergraduate Researcher **National Taiwan University**
Advisor: Prof. Winston H. Hsu Sep. 2018–Nov. 2020
– Researched on **Depth Completion** to improve depth map structure and quality. ICCVW'19
– Researched on **LiDAR Signal** to enhance the performance of **Stereo Matching** and **Depth Estimation**. CVPR'21

Publications

– **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" (Will appear in European Conference on Computer Vision, Oct 2022). [Paper] [Code]
– Kuan-Chih Huang, **Tsung-Han Wu**, Hung-Ting Su, Winston H. Hsu "MonoDTR: Monocular 3D Object Detection with Depth-Aware Transformer." In IEEE Computer Vision and Pattern Recognition, Jun 2022. [Paper] [Code]
– **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." In IEEE International Conference on Computer Vision, Oct 2021. [Paper] [Code] [Video]
– Yu-Kai Huang, Yueh-Cheng Liu, **Tsung-Han Wu**, Hung-Ting Su, Yu-Cheng Chang, Tsung-Lin Tsou, Yu-An Wang, and Winston H. Hsu."S3: Learnable sparse signal superdensity for guided depth estimation." In IEEE Computer Vision and Pattern Recognition, Jun 2021. [Paper]
– Yu-Kai Huang*, **Tsung-Han Wu***, Yueh-Cheng Liu, and Winston H. Hsu. "Indoor depth completion with boundary consistency and self-attention." In IEEE International Conference on Computer Vision (ICCV) Workshops, Oct 2019. [Paper] [Code]

Work Experiences

NTUCSIE Network and System Administration Team **Taipei, Taiwan**
System Administrator [Certificate Link] Feb. 2018–Jun. 2020
– Supervisor: Prof. Hsin-Mu Tsai

- An experienced section chief of mail service, maintaining the mail services used by thousand of people and help users troubleshoot problems. Collaborate with the team to develop automated deployment toolkit. (2018-2019)
- An administrative coordinator of the system administration team. United the team to restructure system architecture and successfully improve system backup and monitoring. (2019-2020)

ASUS AICS Internship Program **Taipei, Taiwan**
Data Scientist Intern Jul. 2019–Aug. 2019

- Develop a toolkit that boost OCR performance by denoising and rectification.
- Train a deep neural network that outperforms their original object detection model.

Teaching Experiences

Network Administration and System Administration Laboratory **NTUCSIE**
Teaching Assistant 2019, 2020 Spring

- Develop and set two programming homework. Graded the student works. Taught two one-hour lab, including shell script, partition, file-system and Linux kernel. (2019 Spring)
  - Won the "Best Teaching Assistant Awards" in the EECS department. [Link]
- Assist in course syllabus planning, and lead the teaching assistant team to complete all homework assignment and in-class lab. (2020 Spring)

Machine Learning **NTUEE**
Teaching Assistant 2019 Fall

- Develop and set two programming homework. Graded the student works.

Algorithm Design and Analysis **NTUCSIE**
Teaching Assistant 2018 Fall

- Develop and set four hand-written homework. Graded the student works.

Awards

Dean's List Award, at NTU CSIE (For top 5% students); 3x Recipient Fall'16, Spring'17, Fall'19
Best Teaching Assistant Awards, at NTU EECS Spring'19
Foxconn Technology Award (Top 19 applied students in Taiwan, 250K NTD scholarship) Dec. 2021
IPPR Outstanding MS Thesis Award (Top 3 Computer Vision Master's Thesis in Taiwan) Aug. 2022

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.

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