Tsung-Lin Tsou

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About Me

I am skilled in Computer Vision, 3D Object Detection, Domain Adaptation, and Sensor Fusion.
My research is mainly focused on autonomous driving: Intersection Management and 3D Perception.

Education

National Taiwan University **Taipei, Taiwan**
B.S. in Computer Science and Information Engineering *2017 - 2021*
GPA: 4.23 / 4.3, **Ranking**: 3% [transcript]
Honors: Dean's List Award * 4

National Taiwan University **Taipei, Taiwan**
M.S. in Computer Science and Information Engineering *2021 - 2023*
Advisor: Prof. Winston H. Hsu
Lab Affiliation: Communication and Multimedia Lab (CMLab)

Publication

Conference Paper

[1] **TL Tsou**, TH Wu, WH Hsu. "WLST: Weak Labels Guided Self-training for Weakly-supervised Domain Adaptation on 3D Object Detection". ICRA 2024. [paper], [github]

- We proposed a general weak labels guided self-training framework to obtain more robust pseudo labels and improve the domain adaptation (DA) performance in a cost-effective way.
- Our framework is extensively evaluated on three widely used 3D object detection datasets and outperforms previous state-of-the-art methods on all evaluation tasks.

[2] **TL Tsou**, CW Lin, Iris HR Jiang. "Deadlock Analysis and Prevention for Intersection Management Based on Colored Timed Petri Nets". DATE 2022. [paper], [github]

- We proposed a Colored Timed Petri Net (CTPN) based model for intersection management, allowing us to consider timing, vehicle-specific information, and different types of vehicles.
- We are the first work that design deadlock-free policies to guarantee deadlock-freeness in intersection management.

[3] YK Huang, YC Liu, TH Wu, HT Su, YC Chang, **TL Tsou**, YA Wang, WH Hsu. "S3: Learnable Sparse Signal Superdensity for Guided Depth Estimation". CVPR 2021. [paper]

Workshop Paper

[4] CC Kung, **TL Tsou**, CW Lin. "Intelligent Intersection Management with Non-Connected and Non-Autonomous Motorcycles". DESTION 2020. [paper]

Work Experience

Software Engineer Intern **Hsinchu, Taiwan**
MediaTek, Video Coding & Processing *Jul 2021 - Aug 2021*

- Designed convolutional neural networks (CNNs) to serve as loop filters, effectively reducing quantization noise in video coding.
- Applied the knowledge distillation (KD) technique to reduce the model size by around 40% while preserving comparable performance.

Network Administrator **Taipei, Taiwan**
Men's 1st Dormitory at National Taiwan University *2018 - 2020*

- Troubleshooted Internet issues for 100+ students.
- Improved and maintained the automatic email sending system.

Extracurricular Experience

Vice Leader of Men's Badminton Team **Taipei, Taiwan**
National Taiwan University

- Silver medalist at the 2018 National Intercollegiate Athletic Games
- Bronze medalist at the 2019 National Intercollegiate Athletic Games

Skills

Languages: Experienced in C/C++, Python, Java, and Matlab. Proficient in PyTorch and Tensorflow.
System administration: Git, Linux, and Docker.