Ting Hsuan **Liao**

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"The only stupid question is the one you were afraid to ask but never did."

Education

National Tsing Hua University — *Hsinchu, Taiwan*

B.S. in Computer Science — *Sept. 2018 ~ June 2022*

Overall GPA: 4.17 / 4.30, cumulative ranking: 9/142 , Major GPA: 4.26 / 4.30

University of Maryland — *College Park, US*

Ph.D in Computer Science — *Sept. 2022 ~ June 2027 (exp.)*

Working with Prof. Jia-Bin Huang in UMD Vision Lab. Overall GPA: 4.0 / 4.0

Research Experience

Text-driven Visual Synthesis with Latent Diffusion Prior

- **Ting-Hsuan Liao**, Songwei Ge, Yiran Xu, Yao-Chih Lee, Badour AlBahar, Jia-Bin Huang, under review.
- Propose to *reshape* the noise prediction loss and derive a high-resolution multi-level feature matching loss.
- Demonstrate the efficacy of our approach on three different applications, text-to-3D, StyleGAN adaptation, and layered image editing

ELDA: Using Edges to Have an Edge on Semantic Segmentation Based UDA

- **Ting-Hsuan Liao**, Huang-Ru Liao, Shan-Ya Yang, Jie-En Yao, Li-Yuan Tsao, Hsu-Shen Liu, Chen-Hao Chao, Bo-Wun Cheng, Chia-Che Chang, Yi-Chen Lo, Chun-Yi Lee, in *British Machine Vision Conference* ***(BMVC, 2022)***.
- Introduce a novel framework takes edge prediction as auxiliary task to improve UDA segmentation performance.

Investigation of Factorized Optical Flows as Mid-Level Representations

- Hsuan-Kung Yang, Tsu-Ching Hsiao, **Ting-Hsuan Liao**, Hsu-Shen Liu, Li-Yuan Tsao, Tzu-Wen Wang, Shan-Ya Yang, Yu-Wen Chen, Huang-Ru Liao, Chun-Yi Lee, in *International Conference on Intelligent Robots and Systems* ***(IROS, 2022)*** .
- Research on the pros and cons on optical flow toward Reinforcement Learning process.

Pixel-Wise Prediction based Visual Odometry via Uncertainty Estimation

- Hao-Wei Chen, **Ting-Hsuan Liao**, Hsuan-Kung Yang, Chun-Yi Lee, in *Winter Conference on Applications of Computer Vision* ***(WACV, 2023)*** .
- Introduces pixel-wise prediction based visual odometry (PWVO), which is a dense prediction task that evaluates the values of translation and rotation for every pixel in its input observations.

Sim-to-Real: Autonomous Driving with Unsupervised Domain Adaptation

- Demo website: Sim-to-Real
- Implemented UDA model on a ClearPath Husky AGV equipped with an NVIDIA Xavier board to reality in university campus.

Honors & Awards

2022	**Dean's Fellowship for Incoming Ph.D Student of University of Maryland**,
2021	**Computer Science Senior Project Contest - Finalists**, 12 out of 77 teams
2021	**National Scholarship of Pan Wen-Yuan Foundation**, 12 out of the country
2021	**Interscholastic Innovation Game Design Competition - Best Presentation**, 1 out of 42 teams
2021-2019	**(2022 Spring / 2021 Spring / 2020 Fall / 2020 Spring / 2019 Spring) Academic Excellence Award** , top 5% of class
2021	**Scholarship for EECS Excellent Students**, 6 out of 144 students

Experience

CSMC Course at University of Maryland | Teaching Assistant — *Fall 2022 and Spring 2023*

- Grade lab assignments and exam, and address students' questions.

ELSA Lab at National Tsing Hua University | Undergraduate Research Assistant — *Spring 2020 ~ Spring 2022*

- Conduct research toward Computer Vision (CV) and Reinforcement Learning (RL).

National Tsing Hua University | Academic Counselor — *Spring 2021*

- Provide academic support to students that have difficulty of learning.