Yu-Wen **Tseng**

ARTIFICIAL INTELLIGENCE · VISUAL PERCEPTION · TEST-TIME ADAPTATION

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Research Interests

My work centers on advancing vision-centric perception for driving environments, specifically in the domains of **semantic occupancy prediction** and **test-time adaptation** when facing unknown scenes. Looking forward, I plan to integrate these perception frameworks with the growing field of robotics, investigating how to build **autonomous agents** capable of **continual learning** and robust operation in complex 3D physical worlds.

Education

NTU (National Taiwan University)   *Taipei, Taiwan*

PH.D. IN COMPUTER SCIENCE AND INFORMATION ENGINEERING, GPA: 4.03   *Sep. 2023 - Now*

- Artificial Intelligence and Multimedia (**AIMM**) Research Group @ Communication and Multimedia Laboratory (**CMLab**)
- Advisor: **Wen-Huang Cheng**

NYCU (National Yang Ming Chiao Tung University)   *HsinChu, Taiwan*

M.S. IN INSTITUTE OF ELECTRONICS, GPA: 3.99   *Sep. 2021 - Jun. 2023*
B.S. IN ELECTRICAL ENGINEERING AND COMPUTER SCIENCE, GPA: 3.44   *Sep. 2017 - Jun. 2021*

Publications

Journal Articles

- Liu, H. I., **Y.-W. Tseng**, Chang, K. C., Wang, P. J., Shuai, H. H., and W.-H. Cheng. "A DeNoising FPN with Transformer R-CNN for Tiny Object Detection." IEEE Transactions on Geoscience and Remote Sensing, 2024. 📄🔗

Conference Proceedings

- K.-H. Lin, **Y.-W. Tseng**, K.-Y. Huang, J.-C. Wu, and W.-H. Cheng. "InstructFLIP: Exploring Unified Vision-Language Model for Face Anti-spoofing." ACM MM 2025 (The 33rd ACM International Conference on Multimedia). 📄🔗
- S.-P. Yang, **Y.-W. Tseng**, Y.-C. Yang, I.-B. Liao, C.-E. Huang, S.-H. Liu, Y.-H. Li, J.-C. Wu, H.-H. Shuai, and W.-H. Cheng. "Unraveling Vanishing Point and Calibrating Tiny Object for Semantic Scene Completion." ICIP 2025 (The 32nd IEEE International Conference on Image Processing).
- **Y.-W. Tseng**, S.-P. Yang, J.-C. Wu, I.-B. Liao, Y.-H. Li, H.-H. Shuai, and W.-H. Cheng. "Memory-augmented Re-completion for 3D Semantic Scene Completion." AAAI 2025 (The 39th AAAI Conference on Artificial Intelligence). 📄🔗
- H.-X. Xie, C.-J. Peng, **Y.-W. Tseng**, H.-J. Chen, C.-F. Hsu, H.-H. Shuai, and W.-H. Cheng. "EmoVIT: Revolutionizing Emotion Insights with Visual Instruction Tuning." CVPR 2024 (IEEE/CVF Conference on Computer Vision and Pattern Recognition). 📄🔗
- **Y.-W. Tseng**, H.-H. Shuai, C.-C. Huang, Y.-H. Li, and W.-H. Cheng. "Language-Guided Negative Sample Mining for Open-Vocabulary Object Detection." ICEIC 2024 (International Conference on Electronics, Information, and Communication). IEEE, 2024. 📄
- W.-H. Ke, **Y.-W. Tseng**, and W.-H. Cheng. "Task-Specific Pruning: Efficient Parameter Reduction in Multi-task Object Detection Models." APSIPA ASC 2023 (Asia Pacific Signal and Information Processing Association Annual Summit and Conference). IEEE, 2023. 📄

Preprints & Under Review

- L. Zou, K.-Y. Huang, **Y.-W. Tseng**, L. Lo, J. Sanchez-Riera, J.-C. Wu, H.-H. Shuai, and W.-H. Cheng. "BAB-VAD: Breaking Ambiguity Barriers in Fine-Grained Video Anomaly Detection." AAAI 2026 (Under Review).

Honors & Awards

DOMESTIC

2025	**Epson Innovation Contest Finalist**, Epson	*Taipei, Taiwan*
2024	**Ministry of Education PhD Scholarship**, Ministry of Education	*Taipei, Taiwan*
2024	**Hon Hai Technology Award**, Foxconn Education Foundation	*New Taipei, Taiwan*
2023	**FamilyMart AI Scholarship**, FamilyMart	*New Taipei, Taiwan*

Professional Activities

2025	**Reviewer & Program Committee**, IEEE TPAMI, AAAI, NeurIPS, ACML
2024	**Reviewer & Program Committee**, ACM MM