Zunzhi You

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Education

The University of Sydney — Sydney, Australia
Ph.D. in Computer Science — *Mar. 2023 –*

Sun Yat-sen University — Guangzhou, China
B.E. in Software Engineering — *Aug. 2017 – June 2021*
Overall Average: 90.25%, Ranking: 13/174

National Chiao Tung University — Hsinchu, Taiwan
Exchange Student in the Department of Computer Science — *Sep. 2019 – Jan. 2020*

Publications

Zunzhi You, Linwei Tao, Siyu Xu, Yunke Wang, Chang Xu. Latent World Models Should Plan with Distances Along the Latent Manifold. arXiv, 2026. [Paper] [Code] [Project]

Zunzhi You, Yunke Wang, Haolan Guo, Chang Xu. Prepare to Turn: Learning Anticipatory Maneuvering for Fast Sequential Quadrupedal Navigation. arXiv, 2026. [Paper]

Zunzhi You, Daochang Liu, Bohyung Han, Chang Xu. Beyond Pretrained Features: Noisy Image Modeling Provides Adversarial Defense. NeurIPS, 2023. [Paper] [Code]

Zunzhi You, Yi-Hsuan Tsai, Wei-Chen Chiu, Guanbin Li. Towards Interpretable Deep Networks for Monocular Depth Estimation. ICCV, 2021. [Paper] [Code]

Guanbin Li, Ricong Huang, Haofeng Li, Zunzhi You, Weikai Chen. SENSE: Self-Evolving Learning for Self-Supervised Monocular Depth Estimation. IEEE Transactions on Image Processing, 2023. [Paper]

Chung-Sheng Lai, Zunzhi You, Ching-Chun Huang, Yi-Hsuan Tsai, Wei-Chen Chiu. Colorization of Depth Map via Disentanglement. ECCV, 2020. [Paper] [Code]

Research Highlights

NGC: Manifold-Aware Planning with Latent World Models — *Apr. 2026 – Oct. 2026*
Advisors: Dr Chang Xu, Dr Yunke Wang

- Identified spurious low-cost basins in LeWM's Euclidean latent cost that trap planning away from the goal, motivating distance estimation along the latent manifold
- Developed Neighborhood Graph Cost (NGC), using shortest paths on a mutual nearest-neighbor graph of training latents to replace the terminal cost without retraining the world model
- Improved planning across four benchmarks; at the farthest goal offsets tested, raised TwoRoom success from 27% to 95% and Reacher success from 81% to 100%

PrepTurn: Anticipatory Control for Quadrupedal Navigation — *May 2024 – Mar. 2026*
Advisors: Dr Chang Xu, Dr Yunke Wang

- Formulated sequential local navigation for quadrupedal robots to traverse ordered pose goals while preparing for upcoming turns
- Developed a sim-to-real RL framework combining a persistent-credit reward, next-goal lookahead, and an adaptive goal curriculum, enabling anticipatory turning and efficient sequential navigation
- Deployed the policy on a Unitree Go2, achieving over 99% simulation success and 12–18% shorter mean real-world traversal times than a single-goal baseline across four turning tasks

Adversarial Defense from Noisy Image Modeling Pretraining *Aug. 2022 – May 2023*
Advisors: Dr Chang Xu, Dr Daochang Liu, Professor Bohyung Han

- Implemented a self-supervised pretraining framework that brings adversarial robustness to downstream models
- Recognized that replacing masking with noise in masked image modeling can learn strong noise-invariant features
- Exploited the NIM model's reconstruction ability to remove adversarial perturbations, improving robustness with little sacrifice of clean accuracy

Interpretability of DNNs for Monocular Depth Estimation *Apr. 2020 – Mar. 2021*
Advisors: Dr Wei-Chen Chiu, Dr Yi-Hsuan Tsai, Dr Guanbin Li

- Observed that some neural units are selective to certain depth ranges and contribute more strongly to monocular depth estimation performance
- Assigned a depth range to each unit and trained a more interpretable and accurate monocular depth estimation model
- Validated the method's reliability and applicability, including providing cues to explain model errors

Depth Colorization and its Applications *Sep. 2019 – Mar. 2020*
Advisors: Dr Wei-Chen Chiu, Dr Yi-Hsuan Tsai

- Verified the applicability of our proposed depth colorization model
- Defined a metric of consistency upon the prediction difference of RGB-based vision models to address the problem of unavailable ground truth
- Conducted experiments on two datasets with an object detection model YOLOv3, showing our method was able to maintain the vision model's performance in ill-lighted situations

Selected Awards

Outstanding Graduate of Sun Yat-sen University (16/477). *2021*
First-class Scholarship for Excellent Students of Sun Yat-sen University (top 5%, three times). *2017-2019*