

Zijun Lin

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RESEARCH PROFILE

I am a PhD student in Electrical and Electronic Engineering at Nanyang Technological University, supervised by Assoc. Prof. Bihan Wen and Dr. Cheston Tan, and supported by the **A*STAR Graduate Scholarship (Computing)**. My research interests span **multimodal reasoning, embodied AI, and world models**, with a particular focus on building intelligent and trustworthy systems that can perceive, reason, and model the dynamic environments.

EDUCATION

Nanyang Technological University (NTU)

PhD in Electrical and Electronic Engineering

- Advisors: Assoc. Prof. Bihan Wen and Dr. Cheston Tan
- CGPA: **4.75/5.00**

Aug 2024 – Present

Singapore

Nanyang Technological University (NTU)

BEng in Electrical and Electronic Engineering, Data Intelligence & Processing

- Honours (Highest Distinction)**; CGPA: **4.96/5.00**

Aug 2020 – Jun 2024

Singapore

SELECTED PUBLICATIONS

- Zijun Lin**, Zeqing Wang, Cheston Tan, Bihan Wen, and Yeying Jin. “StatePlay: State-Aware Game World Models for Mechanics-Consistent Generation.” *arXiv preprint arXiv:2607.26754*, 2026.
- Zijun Lin**, Jiafei Duan, Haoquan Fang, Dieter Fox, Ranjay Krishna, Cheston Tan, and Bihan Wen. “FailSafe: Reasoning and Recovery from Failures in Vision-Language-Action Models.” *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2026.
- Zijun Lin**, Shuting He, Cheston Tan, and Bihan Wen. “GroundFlow: A Plug-in Module for Temporal Reasoning on 3D Point Cloud Sequential Grounding.” *IEEE/CVF International Conference on Computer Vision (ICCV)*, 2025.
- Zijun Lin**, M Ganesh Kumar, and Cheston Tan. “Human-like Compositional Learning of Visually-Grounded Concepts Using Synthetic Data.” *ICLR 2025 SynthData Workshop*.
- Zijun Lin**, Haidi Azaman, M Ganesh Kumar, and Cheston Tan. “Compositional Learning of Visually-Grounded Concepts Using Reinforcement.” *CVPR 2024 SynData4CV Workshop*.
- Zijun Lin**, Ke Xu, Chengfang Fang, Huadi Zheng, Jaheezuddin Aneez Ahmed, and Jie Shi. “QUDA: Query-Limited Data-Free Model Extraction.” *ACM ASIA Conference on Computer and Communications Security (AsiaCCS)*, 2023. **Distinguished Paper Award (Top 2%)**.

RESEARCH EXPERIENCE

Tencent

World Model Research Intern

- Proposed StatePlay, the first state-aware game world model that jointly predicts game states and visual dynamics, guiding frame generation to remain consistent with the underlying game mechanics.
- Improved mechanics fidelity by **18.6%** over a stateless baseline with only pixel-level supervision, demonstrating the benefits of state modeling for mechanics-consistent generation.

May 2026 – Present

Singapore

Agency for Science, Technology and Research (A*STAR)

PhD Scholar and Researcher

- Developed FailSafe, a failure-reasoning and recovery framework with executable robot recovery actions; improved OpenVLA, OpenVLA-OFT, and π_0 -FAST by up to **22.6%**.
- Demonstrated that our framework could be generalized across diverse camera angles, object categories and robotic embodiments.

Aug 2024 – Present

Singapore

Huawei International

Research Intern, AI Security

- Proposed QUDA, a query-limited data-free model-extraction attack combining a GAN prior with deep reinforcement learning; surpassed the strongest baseline by **4.52×** on Fashion-MNIST and **3.95×** on CIFAR-10 under 100K queries.

May 2022 – Dec 2022

Singapore

HONORS AND AWARDS

A*STAR Graduate Scholarship (Computing)

Aug 2024

IEEE Control Systems Chapter (Singapore) Prize (1 recipient selected)

Jul 2024

Distinguished Paper Award, ACM AsiaCCS 2023 (Top 2%)

Jul 2023

Dean's List $\times 3$ (2020–21, 2021–22, 2023–24; Top 5%)

2020–2024

Ministry of Education Full Scholarship (SM2)

2020–2024