Zhijun Cao



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Education

National University of Singapore, College of Design and Engineering Aug 2025 – Jan 2027 (expected)

M.Sc. in Electrical Engineering | GPA: **4.0/5.0**
Robot learning research at **Show Lab**, advised by **Prof. Mike Zheng Shou**.

Zhejiang University, College of Electrical Engineering Sep 2020 – Jun 2024

B.Eng. in Automation | GPA: **3.69/4.0** (last two years: **3.82/4.0**)
Research assistant at the Zhejiang Key Laboratory of Electrical Technology and System on Renewable Energy (Jun 2024 – Jul 2025), advised by Prof. Miao Yu: battery impedance-spectrum and battery-health prediction, and a language-model-based system for grading laboratory reports.

Publications (*Equal contribution)

Peer-reviewed

[1] Yanzhe Chen*, **Zhijun Cao***, Mike Zheng Shou. "Where Success Breaks: Failure-Boundary Learning for Robust Vision-Language-Action Models." *Conference on Robot Learning (CoRL)*, 2026. *arXiv*

[2] Danze Chen, Yanzhe Chen, Qiming Huang, **Zhijun Cao**, Chen Gao, Mike Zheng Shou. "Supervise What Survives: Geometry-Guided VLA Adaptation from Synthetic Robot Videos." *Conference on Robot Learning (CoRL)*, 2026. *arXiv*

[3] **Zhijun Cao**, Yan He. "Imitation Learning Based Manipulator Skill Training for Home Environment." *China Automation Congress (CAC)*, 2024. *IEEE Xplore*

[4] Lingxia Lu, Zile Feng, **Zhijun Cao**, Zhejing Bao, Miao Yu. "Intelligent Review System for Embedded Microprocessor Lab Reports Powered by Large Language Models." *Research and Exploration in Laboratory*, 2026. *CNKI*

Preprints

[5] Yanzhe Chen*, Zechen Bai*, **Zhijun Cao***, Wenzheng Zeng*, Kevin Qinghong Lin, Yiqi Lin, Guoqiang Liang, Kevin Yuchen Ma, Qiming Huang, Mike Zheng Shou. "Show-Harness: Just a VLM Agent Can Play Robots." arXiv, 2026. *arXiv* | *Page*

[6] Yanzhe Chen, Ziyi Yang, Jifeng Zhu, Qiming Huang, Ruihe An, Peiyao Xu, Hesen Yang, Runda Liu, Chang Gong, **Zhijun Cao**, Zechen Bai, Wenzheng Zeng, Yiqi Lin, Guoqiang Liang, Kevin Yuchen Ma, Kevin Qinghong Lin, Mike Zheng Shou. "Survey on Multimodal Embodied Agents: A Unified Capability-centric Perspective from Computer-Use to Robot-Use." arXiv, 2026. *arXiv* | *Page*

[7] Yanzhe Chen*, **Zhijun Cao***, Zechen Bai*, Wenzheng Zeng*, Kevin Yuchen Ma, Yiqi Lin, Guoqiang Liang, Xiaokang Liu, Ke Sun, Kevin Qinghong Lin, Mike Zheng Shou. "RUIBench: What Makes a Good Robot-Use Interface?" arXiv, 2026. *arXiv* | *Page*

[8] Yanzhe Chen*, **Zhijun Cao***, Ruihe An*, Chang Gong*, Mike Zheng Shou. "MRBench: Benchmarking Physical Necessity Reasoning in Heterogeneous Multi-Robot Manipulation." arXiv, 2026. *arXiv* | *Page*

Under review

[9] "Learning from Last-Mile Failures in Fine-Grained Robotic Manipulation." Co-first author. Under double-blind review.

Other writing

[10] Yuxuan Ouyang, **Zhijun Cao**, Yiying Zhou. "BG Tree: A Documentary Report on the Historic Cedar at ZJU Yuquan Campus Gate." *China Campus*, June 2025. *PDF*

[11] **Zhijun Cao**, Pinhong Chen, Zifeng Huang, Shuzhe Rui, Xiao Wang. "Julia Implementation of Continuous-time Diffusion Models." Course blog for NUS EE5311, March 2026. *Blog* | *Code*

Internships

Mikomiko Pte Ltd, Singapore Aug 2025 – Feb 2026; Jun 2026 – present

AI Scientist Intern (part-time). Continued pre-training of image generation and editing models using 100M-scale image–text data, and distillation of these models for faster inference.

InnoMotion Co. Ltd, Shanghai — R&D Department Jul 2023 – Sep 2023

ML Algorithm Engineer Intern. Depth-camera-based human motion recognition for a rehabilitation training analysis device; 3D human pose estimation from RGB-D images.

Honours & Research Funding

Outstanding Undergraduate Thesis, College of Electrical Engineering, Zhejiang University, 2024.
Zhejiang Provincial Xinmiao Talent Plan, Project Lead, 2022–2023 (No. 2022R401035). Automated coffee-brewing robot; rated excellent at both college and university reviews.

Skills & Languages

Methods and tools: imitation and reinforcement learning, diffusion and flow-matching models, vision-language-action models, simulation-to-real transfer; Python, C/C++, MATLAB/Simulink, PyTorch.
Languages: Mandarin (native); English (IELTS 7.0).