

Chen Shenghan — Curriculum Vitae

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PERSONAL PROFILE

I am highly motivated to pursue a Ph.D. program and research assistant opportunities, with a targeted focus on **Embodied AI**, **3D Egocentric Perception**, and **Long-Tailed Learning**. With a robust background in mathematics and programming, my academic journey is deeply anchored in computer vision, explicitly aligning with the development of unified AR-AI frameworks for real-world applications such as comprehensive elderly care. I have co-authored three academic papers, including one accepted to **CVPR 2026** (Co-first author), which directly addresses the head-tail seesaw dilemma via loss landscape geometry—a core algorithmic challenge in mitigating data imbalance for embodied systems. Building on my background in multi-modal learning and Vision-Language-Action (VLA) models, I am eager to contribute to cutting-edge research in robotic intelligence, translating underlying algorithmic innovations into robust, clinical realities.

EDUCATION

Shandong University <i>Urban Underground Space Engineering</i>	Jinan, China 09/2021 - 06/2022
Shandong University <i>Software Engineering</i> - GPA: 90.01/100	Jinan, China 09/2022 - 06/2026

ACADEMIC EXPERIENCE

Since March 2025, I have served as an Undergraduate Research Assistant at the SDU Time Lab, working under the supervision of Prof. Xiankai Lu and Prof. Yilong Yin. My initial research focused on image recognition and semantic segmentation within the challenging context of data imbalance (Long-Tail Dataset). Building upon this foundation, I subsequently collaborated with Prof. Yawei Li from ETH Zürich on advanced research initiatives. This collaboration significantly influenced my second major project, which integrates diffusion models and AI agents to develop robust solutions for mitigating the impact of imbalanced data distributions.

Reframing Long-tailed learning via Loss Landscape Geometry

- Accepted by **CVPR2026**, **Co-first author**, listed first.
- We investigate the head-tail seesaw dilemma from the loss landscape view and posit the underlying factors (“catastrophic forgetting” and the sharpness region).
- We transfer long-tailed learning into a continual learning task to diagnose these issues, while improving computation efficiency.
- Based on the loss landscape of model training, this paper proposes to use the idea of continuous learning and sharpness perception to improve the model’s attention to tail classes and counter the overfitting phenomenon of the model in the context of data imbalance, to improve the generalization of the model. Thus, the performance of the model is greatly improved without the use of external synthetic data.

Rethinking Long-Tailed Learning: Decoupled Loss Geometry and Generative Replay

- Manuscript for **IEEE TPAMI**, **First author** (A significant extension of our **CVPR2026** work).
- We re-frame LT learning as a “continual learning” where head-class dominance triggers catastrophic forgetting of tail-class representations during joint training.
- This paper proposes a spatiotemporal decoupled paradigm that separates manifold consolidation from boundary calibration to resolve gradient-level optimization conflicts.
- Compared to our CVPR 2026 baseline, we substantially boost accuracy on CIFAR100-LT (53.2% to 54.6%) and ImageNet-LT (57.9% to 58.8%), while remarkably reducing total training time (e.g., from 1.67h to 1.06h and 14.10h to 11.50h).

Towards Refined Data Augmentation for Long-tailed Recognition

- submission to **Machine Intelligence Research (MIR)**, **First author**.
- We rethink the data augmentation in LT, while improving computation efficiency by sample selection.
- We propose that in LT, data augmentation should focus on data distribution shift.
- Based on the large models, this paper proposes automated data augmentation to solve the bias problem caused by data imbalance, and uses automated data augmentation to solve the mismatch between synthetic data and raw data distribution.

Extracurricular Activities

Class President, Class 1, Software Engineering, School of Software, Shandong University

- 2022 – Present
- Organized four class meetings and two class outings
- Led the class's Youth League Secretary, Study Committee Member, and other personnel to handle various class affairs

Research and Development of Tunnel Disease Robots and Innovation Practices

- Participated in research and development of tunnel disease robots and innovation and entrepreneurship practices in Shandong Province
- Won the silver award in the 2023 China College Students' Innovation and Entrepreneurship Competition in Shandong Province

Publicity Director, Career Planning Competition 2025 at Shandong University

- Served as both a participant and the publicity director for the competition
- Won the second prize at the university level in the final round and organized promotional activities for the competition across all campuses
- Attracted a large number of students to participate in the event through activities such as poster displays and presentations

Head of the Office Department, Student Union of Shandong University

- 2021 – 2023
- Served as a member and later head of the Office Department
- Acted as the chief planner and host for the "Scholarly Shandong" event organized by the Qilu Transportation Institute at Shandong University in 2022

AWARDS & HONORS

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| • National Scholarship | Ministry of Education, 2023 |
| • Xiaomi Scholarship | Shandong University, 2021–2022 |
| • First Prize of Outstanding Student Award | Shandong University, 2022–2023 |
| • Second Prize of Outstanding Student Award | Shandong University, 2023–2025, 2021–2022 |
| • First Prize of The Specialty Award in Entrepreneurial Practice | Shandong University, 2022–2023 |
| • Second Prize of The Specialty Award in Research & Innovation | Shandong University, 2023–2024 |
| • Outstanding Graduate of Shandong University | Shandong University, 2026 |

Skills

- **Programming:** Python, C++, Java, MATLAB, SQL, Shell/Bash.
- **AI & Frameworks:** PyTorch, OpenCV, Hugging Face, LangChain, CUDA.
- **Tools & Miscellaneous:** Git, Linux, Docker, L^AT_EX, Markdown, SPSS, Stata.
- **Soft Skills:** Academic Writing, Problem Solving, Team Collaboration, Communication.