西北工业大学 NORTHWESTERN POLYTECHNICAL UNIVERSITY

Mr. Like Liu

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EDUCATION

Northwestern Polytechnical University (NPU) **Xi'an, China**

- BEng in Software Engineering Sep 2022 – Jun 2026
- **Comprehensive Assessment Average: Ranked 3rd/1st/2nd respectively in 3 years; GPA: 89.67/100**
- **English: IELTS 7.5;** CET-6 616; First Prize, National English Competition for College Students (NECCS)
- Engineering Mentor: Prof. Liang He, School of Software, NPU (Industrialization of humanoid robots)
- Research Mentor: Prof. Dian Shao, Unmanned Systems Research Institute, NPU (AI algorithms for UAVs, Embodied AI, cognitive intelligence, video understanding)

RESEARCH EXPERIENCE (Research Interests: embodied intelligence, VLN/VLA, 3D spatial understanding, intelligent video understanding)

***Team Member,* Academic Project: Fine-grained Action Recognition under Temporal Corruption via Skeleton Decomposition and Sequence Completion** Dec 2024 – Aug 2025

- Supervisor: Prof. Dian Shao (NPU)
- Overview: Addressing Fine-grained Action Recognition under Temporal Corruption in skeleton sequences, proposed FineTec, a unified framework integrating context-aware sequence completion, skeleton-based spatial decomposition and physics-driven acceleration modeling; constructed the Gym288-skeleton dataset with 38K fine-grained annotations. Achieved 89.1% and 78.1% Top-1 accuracy on Gym99-severe and Gym288-severe.
- Contributions:
  - Dataset construction: Completed annotations for 12K segments of competitive sports videos based on Gym99, forming a extended fine-grained skeleton posture dataset Gym288-skeleton.
  - Algorithm design: Co-designed the fine-grained action recognition architecture; implemented the skeleton sequence completion module using in-context learning and multi-mask strategies.
  - Co-authored a paper accepted by AAAI 2026.

***Team Member,* Academic Project: Integrating Fine-grained Cognitive Modules for Zero-shot UAV Vision-Language Navigation & Benchmark** Feb 2025 – Present

- Open Research Project, National Key Laboratory of Unmanned Aerial Vehicle Technology; Supervisors: Prof. Dian Shao (NPU), Prof. Jieqi Shi (NJU)
- Overview: Targeted Vision-and-Language Navigation (VLN) for Unmanned Aerial Vehicles, integrating multiple LLM/VLM-based cognitive modules. Designed prompting strategies to leverage mid-sized models and realised information exchange via interactions among cognitive modules. In parallel, constructed a high-quality fine-grained dataset. Achieved performance surpassing existing zero-shot methods on the AerialVLN benchmark.
- Contributions:
  - Dataset construction: Performed quality filtering on AerialVLN and refined referring expressions, producing 300 annotated instruction-trajectory pairs, forming fine-grained dataset AerialVLN-Fine.
  - Co-authored three papers: accepted by ICAUS 2025 (EI) and Acta Aeronautica et Astronautica Sinica (EI), submitted to CVPR 2026.

Thesis: Spatio-Temporally Consistent Multi-View Object Temporal Localization for UAVs Oct 2025 – Present

- Supervisor: Prof. Dian Shao (NPU)
- Overview: Addressing the challenge of inconsistent object detection across dynamic viewpoints in drone video streams, proposed a novel task: spatio-temporally consistent multi-view object temporal localization.
- Contributions:
  - Dataset construction: Constructed DroneLoc, a benchmark for multi-view object temporal localization with 500+ objects, precise temporal labels, and diverse simulated flight trajectories.
  - Algorithm design: Designed VFM–VLM collaborative framework STLoc featuring a cross-view instance consistency adapter, enabling robust identification of the same entity under viewpoint changes.
  - Plan to submit a paper to ACM MM 2026.

ACADEMIC ACHIEVEMENTS

Publications (see Research Experience for details)

- Dian Shao*, Mingfei Shi, **Like Liu**. (2026). FineTec: Fine-Grained Action Recognition under Temporal Corruption via Skeleton Decomposition and Sequence Completion. In Proceedings of the 40th AAAI Conference on Artificial Intelligence (AAAI 2026)

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- Dian Shao*, **Like Liu**, Zhengzheng Xu, Junqiang Bai. (2026).Vision-and-Language Navigation for Unmanned Systems: Progress and Perspectives. In Proceedings of the 5th International Conference on Autonomous Unmanned Systems (ICAUS 2025) (EI indexed)
- Dian Shao*, Chu Tang, Min Chang, **Like Liu**, Yule Wang, Hao Li, Junqiang Bai. (2025). Intelligent UAVs Empowered by Large Models: Progress, Applications and Perspectives. (2026). Acta Aeronautica et Astronautica Sinica (EI indexed). https://doi.org/10.7527/S1000-6893.2026.33148
- Dian Shao*, Zhengzheng Xu, Peiyang Wang, **Like Liu**, Yule Wang, Jieqi Shi, Jing Huo. (2025). FineCog-Nav: Integrating Fine-grained Cognitive Modules for Zero-shot Multimodal UAV Navigation. Submitted to CVPR 2026

Invention Patents

- Dian Shao, Mingfei Shi, Junqiang Bai, Shengda Xu, Haodong Chen, Yongle Huang, **Like Liu**. (2025). Fine-grained human motion generation method based on physical laws and skeleton guidance. Granted, No. ZL202510575275.6
- **Like Liu**, Boyang Sun, Liang He. (2025). Humanoid robot navigation method using a hybrid fuzzy neural network and adaptive PID control algorithm. Published, No. CN120385341A
- Dian Shao, Zhengzheng Xu, Peiyang Wang, **Like Liu**, Jieqi Shi, Yule Wang, Jing Huo. (2025). Zero-shot Vision-and-Language Navigation method for UAVs via integration of fine-grained cognitive modules. Published, No. CN121230728A
- Dian Shao, Mingfei Shi, **Like Liu**. (2025). Fine-grained action recognition meunder temporal corruption via skeleton decomposition and sequence completion. Published, No. CN121354225A

Translated Monograph

- Bernd Henze. (2026). Whole-Body Control for Multi-Contact Balancing of Humanoid Robots: Design and Experiments (Liang He, Yan Ma, **Like Liu**, Yuting Shi Trans.). Beijing: National Defense Industry Press

Software Copyrights

- **Like Liu**, Haoxuan Li. (2023). Time-window constrained multi-node path planning system. No. 12125321
- Yutong Li, **Like Liu**, Haoxuan Li. (2024). UAV-enabled low-altitude logistics planning system. No. 13950938
- **Like Liu**, Shuchang Zhang, Zhenguo Li, et al. (2025). GTD-based task assignment and management system. No. 15861786

HONORS & AWARDS

Competitions (software development, mathematical modelling, English speaking)

International/National

- MCM/ICM 2024 & 2025 — Honourable Mention
- NECCS 2023 — First Prize
- Global Campus Artificial Intelligence Algorithm Elite Competition 2024 (Finals) — First Prize
- National Robot Championship 2024 (Finals) — First Prize
- "Challenge Cup" 2024 — Leaderboard Challenge Track (Finals) — Second Prize
- International Advanced Robotics & Simulation Tech Competition 2024 (Finals) — Second Prize

Provincial

- FLTRP • ETIC Cup 2023 — Interpretation Track (Shaanxi) — Gold Prize
- China International College Students' Innovation Competition 2024 (Shaanxi) — Gold Prize
- National 3D Digital Innovation Design Competition 2024 (Shaanxi) — First Prize
- China Undergraduate Mathematical Contest in Modeling 2024 (Shaanxi) — First Prize

Titles (outstanding student, volunteering, social practice)

- Provincial Outstanding Volunteer, 2024 & 2025
- NPU Outstanding Student, 2023 & 2024
- Technical Staff of 2023 ICPC Xi'an Invitational Contest

Scholarships

- NPU First-class Scholarship (Top 5% in cohort), 2023 & 2024
- HyperVision Scholarship (1 per school), 2024
- Ningbo Future Star Scholarship (1 per school), 2025

INTERNSHIP AND PRACTICAL TRAINING

- QingCloud Technology — Wuhan R&D Centre — AI Development Engineer Intern — Jul 2024 – Aug 2024
- COP29 (29th UN Climate Change Conference) — Student Representative of NPU — Nov 2024
- AAAI 2026 & CVPR 2026 — Reviewer — Aug 2025 – Nov 2025