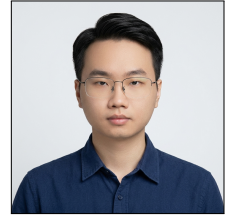


Shizhao Gao

gsz1999@fafu.edu.cn | [Website](#) | [Google Scholar](#) | [GitHub](#)

ORCID: 0009-0009-1131-3735 | **Date of Birth:** 24 November 1999

Place of Birth: Henan Province, China | **Nationality:** Chinese



Research Profile

Researcher in efficient and reliable video understanding, focusing on self-supervised temporal modeling, human-centric action analysis, and efficient video-language model inference. Experienced in building reproducible training and evaluation pipelines, from problem formulation and implementation to cross-model analysis. Current interests include adaptive visual-token allocation, efficient multimodal reasoning, and robust transfer across video-language architectures under realistic compute budgets.

Education

Fujian Agriculture and Forestry University | *Fuzhou, China* Sep. 2024–Jun. 2027

M.Eng. in Artificial Intelligence, College of Mechanical and Electrical Engineering; expected graduation: June 2027.

Jointly trained at the *Quanzhou Institute of Equipment Manufacturing, Haixi Institute, Chinese Academy of Sciences.*

Thesis: “Research on Weakly Supervised Repetitive Action Counting Methods Based on Action Similarity.”

Advisors: Prof. Jun Li and Assoc. Prof. Qiming Li. **Rank:** Top 10% in comprehensive assessment.

South-Central Minzu University | *Wuhan, China* Sep. 2018–Jun. 2022

B.Eng. in Software Engineering, School of Computer Science. Rank: Top 10% in comprehensive assessment.

Publications

Published

- [1] **Shizhao Gao**, Jun Li, Qiming Li*. “Count What Repeats: Period-Adaptive Multi-Scale Consistency for Self-Supervised Repetitive Action Counting.” *CVPR 2026 Findings*. [\[Paper\]](#) Poster presented at CVPR 2026, Denver, CO, USA.

Under Review

- [2] **Shizhao Gao**, Jun Li, Yinhui Xie, Qiming Li*. “Nano-TCC: A Resource-Aware On-Device Repetition Sensing System for Mobile Edge Devices.” Manuscript under review at *IEEE Transactions on Mobile Computing*.
- [3] Jun Li, **Shizhao Gao**, Tianwen Hu, Yinhui Xie, Zhouhua Liu, Qiming Li*. “TWCRCAC: Leveraging Temporal Cycle Consistency and Dynamic Thresholding for Robust Repetitive Action Counting.” Revision submitted to *Pattern Recognition*.
- [4] Jun Li, **Shizhao Gao**, Jingying Wu, Tianwen Hu, Qiming Li*, Feifei Guo. “GMFL-Net: A Global Multi-geometric Feature Learning Network for Repetitive Action Counting.” Revision submitted to *Pattern Recognition*.
- [5] Jun Li, **Shizhao Gao**, Qiming Li*. “Semantic-Guided Orthogonal Decoupling and Adaptive Signal Tuning for Self-Supervised Repetitive Action Counting.” Manuscript under review at the *International Journal of Computer Vision*.
- [6] Jun Li, **Shizhao Gao**, Tianwen Hu, Qiming Li*. “FG-Net: Adaptive Node Interaction in a Flexible Graph-Based Network for Repetitive Action Counting.” Manuscript under review at *IEEE Transactions on Circuits and Systems for Video Technology*.
- [7] **Shizhao Gao**, Jun Li, Qiming Li*. “Remember Gravity, Forget the Camera: AEGIS for View-Robust Skeleton Action Recognition.” Submitted to *AAAI 2027*.
- [8] **Shizhao Gao**, Jun Li, Qiming Li*. “Anomaly Is Relational: Gated Social Dynamics for Multi-Person Skeleton Anomaly Detection.” Submitted to *AAAI 2027*.

Honors and Awards

- **CVPR Compute Gold Star**, 2026. Recognised for computational efficiency and reproducibility; awarded to the top 5% of papers across the Main Track and Findings.
- **Academic Scholarship, Chinese Academy of Sciences**, 2025.
- Third Prize, “Huawei Cup” China Graduate Mathematical Contest in Modeling, Team Leader, 2025.
- Academic scholarships and provincial innovation awards during undergraduate study.

Research Mentoring and Lab Service

- Mentored undergraduate students on capstone thesis projects, helping them refine research questions, select appropriate methods, plan experiments, and structure technical writing.
- Supervised interns in research software development and conference-paper preparation; coordinated task decomposition, coding milestones, experimental reporting, and manuscript feedback.
- Maintained shared laboratory GPU servers and coordinated computing-resource allocation across projects, supporting reproducible team workflows and resolving environment or scheduling issues.

Project Experience

Period-Adaptive Self-Supervised Repetitive Action Counting | *M.Eng. Project* Sep. 2024–Present

- Address the fixed-period assumption common in prior repetitive-action counting methods, which is brittle under within-video speed changes, through period-adaptive temporal modeling.
- Develop multi-scale consistency and action-similarity objectives that learn repetition structure without count annotations, rather than relying on supervised labels or a single temporal scale.
- Achieved state-of-the-art label-free performance: 0.129 MAE / 0.842 OBO on RepCount and 0.098 MAE / 0.879 OBO on Countix, outperforming previous supervised baselines.
- **Led** problem formulation, method design, experiments, ablation studies, and manuscript preparation. Independently implemented the full PyTorch pipeline. The work resulted in a CVPR 2026 Findings paper and a CVPR Compute Gold Star.

Skeleton-Based Action Understanding | *Project Member* Sep. 2024–Present

- Investigate gravity-aware view decoupling and adaptive feature modulation to reduce the camera-coordinate dependence of conventional skeleton action representations while preserving motion semantics.
- For multi-person anomaly detection, model gated, dynamic inter-person dependencies in place of isolated-person or fixed-relation analysis, allowing social context to influence anomaly assessment.
- Implement the shared preprocessing, spatiotemporal representation, training, and evaluation pipelines in Project 2024QZC001R; the two methodological directions led to AAAI 2027 submissions.

Frame Sufficiency and Adaptive Routing for VideoLLMs | *Independent Research Project* 2026

- Move beyond conventional dense or fixed-budget frame sampling by measuring minimum sufficient frame sets on 1,336 LongVideoBench validation examples.
- Design visual-token masking, answer-option scoring, and nested confidence routing that escalates uncertain examples to larger frame budgets; package Qwen2.5-VL and LLaVA-Video adapters, automated tests and CI, experiment artifacts, and data/licensing documentation for reproducible evaluation.
- Routing saved 18.0% FLOPs for Qwen at near-baseline accuracy but did not transfer to LLaVA, providing both an efficiency result and a clear cross-model limitation. [\[GitHub\]](#)

Professional Experience

Wuhan Yangtze Computing Technology | *Product Engineer* Jun. 2022–Jan. 2024

- Developed and adapted cloud-computing server systems for more than 100 enterprise and public-sector projects, translating workload requirements into platform configurations and technical specifications.
- Led compatibility validation and system integration for high-density computing platforms, contributing to RMB 30 million in initial order volume.

Technical Skills

Programming (Advanced): Python, C++, NumPy, and Pandas.

Deep Learning/CV (Advanced): PyTorch, Transformers, MMDetection, and OpenCV; temporal modeling, self-supervised learning, human pose estimation, and skeleton-based action analysis.

Video/VLM Evaluation: Qwen2.5-VL and LLaVA-Video (Advanced); InternVL and LongVideoBench (Intermediate); frame scaling, confidence routing, answer-option scoring, and FLOP profiling.

Systems: Linux, Git, Docker, and CUDA (Advanced); ONNX, TensorRT, research computing, and experiment management (Intermediate).

English: Professional working proficiency in technical documentation, academic reading, and research writing; fluent in everyday conversation.

Professional Service: Reviewer, *Image and Vision Computing*, 2026.

References

Both referees are affiliated with the *Quanzhou Institute of Equipment Manufacturing, Haixi Institute, Chinese Academy of Sciences*.

Prof. Jun Li (*Principal Supervisor*)

Professor and Doctoral Supervisor; Deputy Director and Group Leader. Research: environmental perception and robot interaction/control. Provides high-level strategic guidance and overall research evaluation.

junli@fjirsm.ac.cn | [Homepage](#)

Assoc. Prof. Qiming Li (*Day-to-day Research Supervisor*)

Senior Researcher. Research: machine vision, pedestrian and object detection. Primary manuscript adviser; directly oversaw day-to-day project execution, coding, and experimentation for the CVPR 2026 work.

qimingli@fjirsm.ac.cn | [Homepage](#)