



JIAHAO ZHANG

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Born September 2000 | Nanyang, Henan, China



EDUCATION

Beihang University

School of Computer Science and Engineering | Computer Science and Technology

Beijing Institute of Technology

School of Software | Software Engineering

RESEARCH EXPERIENCE

PanoTask

MM 2026 (CCF A) | Second Author

Task-Driven Panoramic Video Generation with Scene-Aware Autoregressive Camera Trajectory Prediction

- Proposed a task-driven panoramic video generation framework that autoregressively predicts camera trajectories through multimodal scene understanding and combines them with diffusion models to generate trajectory-controllable 360-degree panoramic video.
- Designed the overall model and a two-stage architecture for camera-trajectory prediction and panoramic-video generation; adapted the Wan2.1 video diffusion model and performed LoRA fine-tuning.
- Implemented Plücker camera conditioning, structured trajectory noise, and ERP geometry constraints, improving temporal and geometric consistency under large-scale camera motion.

MKSNet

MMM 2025 (CCF C) | First Author

Advanced Small Object Detection in Remote Sensing Imagery with Multi-Kernel and Dual Attention Mechanisms

- Proposed MKSNet for small-object detection in high-resolution remote-sensing imagery, addressing weak features, large scale variation, and complex-background interference.
- Designed a Multi-Kernel Selection module with multi-scale large kernels and a spatial/channel dual-attention mechanism to enlarge the effective receptive field and adaptively enhance key regions and feature channels.
- Built the Oriented R-CNN training pipeline and completed data processing, hyperparameter tuning, state-of-the-art comparisons, and ablation studies, achieving leading detection performance on DOTA-v1.0 and HRSC2016.

Shanghai Aerospace Science and Technology Innovation Fund (SAST)

Project Lead

Vision-Inspired Neuromorphic Detection and Recognition of High-Speed Spaceborne Targets

- Researched human-vision-inspired neuromorphic methods for spaceborne high-speed target detection and recognition.
- Investigated spiking neural networks, dynamic target detection, pattern recognition, neuromorphic-model training, and onboard deployment; combined these methods with DVS event-camera sensing for low-latency, high-accuracy perception.
- Produced one invention patent application (No. CN202510057670.5).

HONORS AND AWARDS | PAST THREE YEARS

- Beihang University First-Class Scholarship
- Outstanding Master's Thesis, BIT
- Outstanding Graduate Student, BIT
- Beijing Outstanding Graduate
- National Encouragement Scholarship
- Research Competition Scholarship, BIT