Shengyang **Sun**

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Summary

I am currently a Ph.D. student at Zhejiang University, specializing in Information and Communication Engineering, with an expected graduation date in March 2025.

My interests lie in **computer vision**, **video understanding**, **video anomaly detection**, **multimodal large language model**, **weakly supervised learning**, **deep learning**, **machine learning**.

Education

Zhejiang University

DOCTOR OF PHILOSOPHY (PHD) IN INFORMATION AND COMMUNICATION ENGINEERING — *Sep. 2021 - Mar. 2025*

- Research interests include computer vision, video understanding, video anomaly detection, multimodal large language model

National University of Defense Technology

MASTER OF ENGINEERING IN ELECTRICAL ENGINEERING — *Sep. 2017 - Jan. 2020*

- Research interests include neuromorphic computing, spiking neural netwokrs

National University of Defense Technology

BACHELOR OF SCIENCE IN INFORMATICS ENGINEERING — *Sep. 2013 - Jun. 2017*

Internship Experience

Alibaba Cloud

RESEARCH INTERN — *Jan. 2024 - Present*

- Multimodal large model research
- Multimodal video anomaly detection based on large model
- Research on efficient training strategies for video understanding tasks under weak supervision settings

Skills

Programming Languages: C, C++, Python, Java, Matlab

Deep Learning Library: Pytorch, Tensorflow, Theano

Peer-Reviewed Publications

Shengyang Sun, Jiashen Hua, Junyi Feng, Dongxu Wei, Xiaojin Gong. "TDSD: Text-Driven Scene-Decoupled Weakly Supervised Video Anomaly Detection". ACM Multimedia (ACM MM), 2024

Shengyang Sun, Xiaojin Gong. "Event-Driven Weakly Supervised Video Anomaly Detection". Image and Vision Computing, 2024

Shengyang Sun, Xiaojin Gong. "Multi-scale Bottleneck Transformer for Weakly Supervised Multimodal Violence Detection". IEEE International Conference on Multimedia & Expo (ICME), 2024

Shengyang Sun, Xiaojin Gong. "Hierarchical Semantic Contrast for Scene-aware Video Anomaly Detection". IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR), 2023

Shengyang Sun, Xiaojin Gong. "Long-Short Temporal Co-Teaching for Weakly Supervised Video Anomaly Detection". IEEE International Conference on Multimedia & Expo (ICME), 2023

Jiwei Li, Hui Xu, **Shengyang Sun**, *et al.* "In Situ Learning in Hardware Compatible Multilayer Memristive Spiking Neural Network". IEEE Transactions on Cognitive and Developmental Systems, 2021

Jiwei Li, Hui Xu, **Shengyang Sun**, *et al.* "In-situ Learning in Multilayer Locally-connected Memristive Spiking Neural Network". Neurocomputing, 2021

Haijun Liu, **Shengyang Sun**, *et al.* "Binary Memristive Synapse based Vector Neural Network Architecture and its Application". IEEE Transactions on Circuits and Systems, 2020

Jiwei Li, Hui Xu, **Shengyang Sun**, *et al.* "Enhanced Spiking Neural Network with Forgetting Phenomenon based on Electronic Synaptic Devices". Neurocomputing, 2020

Haijun Liu, Changlin Chen, Xi Zhu, **Shengyang Sun**, *et al.* "Memristor-based vector neural network architecture". Chinese Physics B, 2020

Shengyang Sun, Hui Xu, Jiwei Li, *et al.*. "Cascaded architecture for memristor crossbar array based larger-scale neuromorphic computing". IEEE Access, 2019

Shengyang Sun, Hui Xu, Jiwei Li, *et al.*. "A memristor-based convolutional neural network with full parallelization architecture". IEICE Electronics Express, 2019

Shengyang Sun, Jiwei Li, Zhiwei Li, *et al.*. "Quaternary synapses network for memristor-based spiking convolutional neural networks". IEICE Electronics Express, 2019

Shengyang Sun, Hui Xu, Jiwei Li, *et al.*. "Cases study of inputs split based calibration method for RRAM crossbar". IEEE Access, 2019

Shengyang Sun, Hui Xu, Jiwei Li, *et al.*. "Cascaded neural network for memristor based neuromorphic computing". IEEE International Joint Conference on Neural Networks (IJCNN), 2019

Shengyang Sun, Jiwei Li, ZHiwei Li, *et al.*. "Low-consumption neuromorphic memristor architecture based on convolutional neural networks". IEEE International Joint Conference on Neural Networks (IJCNN), 2018

Reviewer Service

IEEE International Conference on Multimedia & Expo (ICME)

IEEE/CVF Conference on Computer Vision and Pattern Recognition (CVPR)

Association for the Advancement of Artificial Intelligence (AAAI)

ACM Multimedia (ACM MM)

IEEE Transactions on Neural Networks and Learning Systems (TNNLS)

IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)

IEEE Signal Processing Letters (SPL)

Neurocomputing