Yukun Tian

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Education

Southeast University, Nanjing, Jiangsu Province, China — September 2022-Present
Candidate for Bachelor of Engineering — Graduation: June 2026
Specialization: Artificial Intelligence
GPA: 3.87 / 4.0; Average Score: 91.38 / 100

Publication (Under Review)

Y. Tian, T. Jiang, K. Tian, et al., *PipeNN: Energy-Efficient and Predictor-Free CPU-GPU Pipeline for Mobile DAG-DNN Inference*, under review in the 31st Annual International Conference On Mobile Computing And Networking (Submitted to MobiCom 2025).

Y. Tian, H. Chen, Y. Deng, et al., *EvAug: Integrating Hierarchical and Adaptive Spatio-Temporal Augmentations into Event-Based Data by Mimicking Real-World Physical Patterns*, under review in The 42th International Conference on Machine Learning (Rejected by ICML 2025, score 2245 / 5 (Avg: 3.25). Submitted to NeurIPS 2025).

Y. Tian, H. Chen, Y. Deng, *SAPE: Efficient End-to-End Representations for Event-based Learning via Spatio-Temporal Adaptive Perception in Multi-scale Temporal Context*, under review in the International Conference on Computer Vision (Submitted to NeurIPS 2025).

Research Experience

Deep Learning and Computer Vision 2024 – 2025

Lead of one Ministry of Education Key Laboratory Open Project for Young Scholars on Event-based Vision and multi-modal learning. Submitted 2 first-author papers to CCF-A conference and applied for 2 patents.

- Proposed the idea, implemented the code, and wrote the paper for the EvAug. Designed the most general and high-performing data augmentation method in event vision, applicable across various networks, datasets, and tasks.
- Proposed the idea, implemented the code, and wrote the paper for the SAPE. Designed a novel adaptive representation module tailored to the spatiotemporal characteristics of event data, achieving state-of-the-art performance across multiple tasks.
- Gained a comprehensive understanding of classic and state-of-the-art techniques in deep learning and computer vision, including initializations, model architectures, optimization algorithms and so on. Currently working on *boosting model performance after fine-tuning*.

Accelerating Inference and Training (MLSys) 2024 – 2025

Lead of Student Research Training Project of Jiangsu Province, working on mobile heterogeneous inference and supernet training. Submitted 1 paper as co-first author to MobiCom 2025, preparing another co-first author paper for ASPLOS 2026.

- As co-first author of the PipeNN project, proposed a novel energy-aware predictor-free pipeline-parallel paradigm and algorithm for mobile DAG-DNN inference. This work is the first to achieve heterogeneous parallel inference of complex DAG-DNNs on mobile devices, reaching state-of-the-art trade-offs between energy consumption and latency.
- Currently working on supernet training project, explored a distributed high-performance training scheme for Once-for-All supernets, aiming to achieve state-of-the-art training efficiency. Plan to submit to ASPLOS 2026.
- Gained hands-on experience in the training and inference details of neural networks, with a strong technical foundation in inference acceleration and distributed training, especially in hardware-level implementation.

Robotics 2023 – 2025

Participated in a series of robotics competitions, including the RoboMaster University Championship, taking responsibility for vision system dev and deployment. Won multiple national awards.

- Served as one of the technical team lead in the 2024 season, responsible for the design of the robot's automatic aiming and shooting system. Developed object detection algorithms based

on YOLO and motion prediction algorithms. Efficiently deployed models on the Nvidia Jetson Orin NX using TensorRT and quantization techniques.

- In the 2023 season, worked as an embedded systems engineer, focusing on motion control functions, including host-device communication and PID control algorithms.
- Gained knowledge of robotics technologies and extensive hands-on experience in integrating hardware and software. Led the development of the vision system that helped the team win the university's first-ever national first prize.

Industry Experience

Huawei Technologies Co., Ltd. July 2024 – September 2024

AI Engineer Intern, NAIE Department, Huawei Nanjing Research & Development Center

- Responsible for the development of high-performance operators for Huawei Ascend AI processors, with a focus on the Ascend 910B series. Tasks included custom operator development for clients and building foundational capabilities for the Ascend operator acceleration library.
- Designed and implemented four high-performance operators. Technical stuff involved NPU architecture, hardware characteristics, operator tiling strategies, low-level API usage, and debugging, primarily using CCE and AscendC languages.
- Although the internship tasks differed from my prior research experience, I quickly adapted by leveraging strong self-learning abilities and proactive communication with colleagues. My rapid ramp-up and performance were highly praised by my mentor.
- Invited to present an end-of-internship experience sharing session. Authored technical documentation read and discussed by over 100 colleagues. Submitted workflow improvement proposals as part of Huawei's internal optimization initiative. Awarded the "Outstanding Student" honor by Huawei Public Development Department.

Representative Course

Major Courses

- Machine Learning: 97 / 100, Optimization Method: 91 / 100, Computer Vision: 99 / 100
- Data Structure: 100 / 100, Operating System: 97 / 100, Distributed System: 100 / 100

Public Courses

- Programming & Algorithmic Language i & ii: 93 / 100 & 95 / 100
- Discrete Mathematics: 94 / 100, Linear Algebra: 98 / 100

Other Experience

Southeast University 3SE Robotics Team Vision Group, *Tech Leader* August 2023-August 2024
Southeast University ZhiShan Student Lecture Group, *Head* October 2024–September 2025
Southeast University Machine Learning Q&A Session, *Mentor* Spring 2025

Selected Honors

2024 National Scholarship – Awarded by the Ministry of Education of the People's Republic of China. Selected as one of 100 exemplary undergraduate recipients featured in the **People's Daily**.
2024 Star of Innovation – Awarded by Southeast University to top 10 undergraduates in STEM.
2024 Outstanding Student – Awarded by Huawei during my internship.
2023 President's Scholarship – Awarded by Southeast University.

Selected Awards

2024 RoboMaster University Championship, Final Tournament (Responsible for Vision Tasks, group tech leader), **National First Prize** (Best in school history).
2024 RoboMaster University Championship, Regional Competition (Responsible for Vision Tasks, group tech leader), **Provincial First Prize**.
2023 13th China Educational Robot Competition Regular & Challenge Seasons (As Captain), National Special Prize & National First Prize. (Champion)
2022 12th China Educational Robot Competition Regular & Challenge Seasons (As Captain), National Special Prize & National First Prize. (Champion)

References

Dr. Ruiting Zhou
Professor of Computer Science at the Southeast University, **Email:** ruitingzhou@seu.edu.cn
Co-author of 1 submitted paper and 1 in-coming paper. (Mobile Inference / ML Sys).

Dr. Hao Chen
Associate Professor of Computer Science at the Southeast University, **Email:** haochen303@seu.edu.cn.
Co-author of 2 submitted paper and 1 in-coming paper. (Computer Vision).