Junran Tao

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Education

Stevens Institute of Technology — Hoboken, New Jersey
Master of Science in Computer Science — GPA: 3.7/4 — *Sep 2024 – May 2026*

University of Shanghai for Science and Technology — Shanghai, China
Bachelor of Engineering in New Media Technology — *Sep 2019 – Jun 2023*

Skills

Languages: Python, Java, C/C++, C#, JavaScript, HTML/CSS, SQL, TypeScript, MATLAB

Technologies: PyTorch, TensorFlow, OpenCV, scikit-learn, Computer Vision, Graph Neural Networks (GNNs), Model Optimization, GPU Acceleration, Multi-Stream CUDA, Large-scale Data Processing, EDA Applications

Experience

Stevens Institute of Technology — Hoboken, New Jersey
Deep Learning Research Assistant — *Sep 2024 – Present, Internship*

- Optimized GPU-based test software using custom CUDA kernels, achieving 4.8× training speedup and reduced memory usage.
- Enhanced software performance through GPU profiling and integrated solutions into PyTorch for multi-server deployment.
- Built tools to support testing, validation, and deployment of deep learning models across diverse datasets.

EarthView Image Inc. — Chengdu, China
Full stack & Deep Learning Engineer — *Jul 2023 – Jun 2024, Full-time*

- Developed a deep learning-based real-time video defect detection system using ResNet18 and OpenCV, achieving 82.4% accuracy with CUDA acceleration.
- Developed an advanced training optimization pipeline with CosineAnnealingWarmRestarts and custom logging, boosting model iteration efficiency by 27%.
- Optimized and refactored the authentication system (C, .NET), reducing latency by 30% through caching and lazy-loading.
- Enhanced internal test tools for GIS software, accelerating map load times by 50%.
- Designed a resilient form validation engine to reduce data errors during user testing by 40%.
- Built internal software update modules for GIS deployment environments, automating release propagation across distributed servers.

Chengdu Yunshang Chuangxiang Intelligent Technology Co. — Chengdu, China
Software Engineer — *Jun 2022 – Aug 2022, Internship*

- Implemented scalable microservices architecture with Spring Boot and Spring Cloud, improving modularity and deployment.
- Developed test coverage using JUnit/Mockito, achieving 85%+ unit test coverage for QA reliability.
- Supported CRM system integration with backend services, enhancing production line management tools.

University of Shanghai for Science and Technology — Shanghai, China
Computer Vision & Software Development Research Assistant — *Sep 2020 – Jan 2022, Internship*

- Engineered a flame recognition algorithm (MATLAB) leveraging HSV color space and connected component analysis, boosting detection accuracy under diverse conditions.
- Built and deployed a large-scale Chinese Opera Search System (.NET, SQL Server, Google Cloud) managing 100K+ records with over 95% test coverage.
- Improved computational efficiency for dynamic video feature extraction with low simulation costs, enhancing real-time performance.

Research Publication

- Yuebo Luo, Shiyang Li, **Junran Tao**, Kiran Gautam Thorat, Xi Xie, Hongwu Peng, Nuo Xu, Caiwen Ding, and Shaoyi Huang. "**DR-CircuitGNN: Training Acceleration of Heterogeneous Circuit Graph Neural Network on GPUs**" International Conference on Supercomputing (ICS 2025). (Accepted)