Linrui Jiang

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EDUCATION

The University of Texas at Austin (UT Austin) — Austin, Unite States
M.S. in Electrical and Computer Engineering — *Expected to graduate: May 2026*

University of Electronic Science and Technology of China (UESTC) — Chengdu, PR China
B.Eng. with Merit in Electronic Science and Technology — *Sept. 2020 - June 2024*
- **GPA:** 3.95/4.00 | **Weighted Average:** 92/100 | **Ranking:** 3/158 | **ECE-Only GPA:** 4.00/4.00
- **Core Courses:** Circuit Analysis and Electronic Circuit (94) | Application and Design of Digital Logic (96)
  Microcomputer Principle and Interface Technology (94) | Signals and Systems (99)
  Advanced Programming Language Design (96) | EDA Technology (96)

PROFESSIONAL SKILLS

Programming Language: Verilog, Python, C/C++; LaTeX, Java
Development Tool: Cadence, Vivado, Keil, Altium Designer; Android Studio, MATLAB
Technology Stack:
- Software: Deep Learning Algorithms, Convolutional Nerual Network
- Hardware: Digital Logic Designed, Hardware System Verification

PUBLICATION

- C. Li, S. Li, **L. Jiang**, B. Guo, J. Zhang, Z. Ye, and Y. Lin, "Generalized Neural Radiance Field Accelerator for Edge AR/VR", *Submitted to ASPLOS 2025*

RESEARCH EXPERIENCE

Performance and Architecture Group @ UT Austin — Austin, Unite States
Research Assistant, Advisor: Dr. Ian Wang & Dr. Junjie Li — *Aug. 2024 - Present*
- High-performance Monitor and Tuning Tool Designed
- Conducted performance analysis and profiling for HPC applications to identify optimization opportunities.

AIoT Smart ICs & Systems Lab @ UESTC — Chengdu, PR China
Research Intern, Advisor: Prof. Jun Zhou — *Oct. 2023 - June 2024*
- **Separable CNN for Speaker Recognition** | Python
- Designed a speaker recognition algorithm with the time delay neural network (TDNN), which set up a rational residual network structure and applied a comprehensive speech dataset.
- Reduced the module's equal error rate (EER) from 14.22% to **0.196%** when full-time enrollment and verification.
- **Hardware-aware Algorithms for Tape Out** | Python
- Made the algorithms hardware-friendly, transferring long audio segments into shorter segments and integrating the processing results from short audio segments.
- Achieved just about **0.05%** performance deterioration on the systems. (**0.245%** compared with 0.196%)
- **Hardware Implementation for Speaker Recognition** | Verilog
- Designed three sub-modules for back-end classification on the Xilinx FPGA, which are responsible for storing the vectors, calculating the paradigms and introducing them into the IP core.
- Satisfies the requirement of outputting similarity results within **1ms** at 100MHz clock frequency.

Efficient & Intelligent Computing Lab @ Georgia Tech — Atlanta, Unite States
Research Intern, Advisor: Prof. Yingyan (Celine) Lin — *May 2023 - Oct. 2023*
- **A Generalized Neural Radiance Field Accelerator for Edge AR/VR** | Java, C
- Proposed a measurement method for the CPU, GPU, DSP and NPU performance on the Snapdragon Mobile Platform. Implemented the framework in the Docker container and using Android Studio IDE.
- Utilized the Neural Processing SDK for AI to run neural networks on edge devices. Employed AI Engine Direct SDK to invoke Qualcomm accelerators. Applied AI Model Efficiency Tool Kit to compress algorithm models for higher efficiency and lower latency.
- Obtained positive feedback and device support from the Qualcomm QIDK and QNN Team. This work is **part of an ASPLOS 2025** submission.

Nanovisualization Research Group @ King A. Univ. of Sci. & Tech. — Thuwal, Saudi Arabia
Visiting Student, Advisor: Prof. Ivan Viola — *June 2022 - July 2022*
- **Algorithms Optimization in a Game Design Project** | Web GPU Shading Language, Java
- Reconstructed the Chrome Dino game on Shader Editor. Designed the game for fast response and precise detection by a two-step solution for collision detection, which combines Bounding Boxes and Detailed Rectangles.
- Implemented the optimized algorithms to reduce the number of Detailed Rectangles that need to be activated. Reduced the react time **from 94ms to 27ms, achieving real-time reaction.** [Demo]

LEADERSHIP & SERVICES

Diversity Support Event   Chengdu, CHN
Lead Student   *Sept. 2022 - Present*

– Led a peer volunteer support group to assist over 120 students (mainly underrepresented groups: Women in STEM & First-generation college students) applying to graduate programmes.
– Committed 1 to 2 hours per week to provide guidance, suggestions and mentorship with 8 partners. To date, they received offers/admission letters from prestigious universities: Stanford (×1), Georgia Tech (×1), UCSD (×2), UVa (×1) and more. [Details]

HONORS & AWARDS

Merit Graduate Scholarship, top 5%, UESTC   June 2024
Excellent Student Scholarship, top 10%, UESTC   Dec. 2022, Dec. 2023
China National Scholarship, top 1%, Ministry of Education of the PRC   Dec. 2022
Academic Outstanding Scholarship, top 15%, School of ESE   Dec. 2021