Linrui Jiang

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EDUCATION

The University of Texas at Austin (UT Austin) — Austin, USA
M.S. in Electrical and Computer Engineering — *Start at Aug. 2024*

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*
- **Advisor:** Prof. Jun Zhou
- **GPA:** 3.95/4.00 | **Weighted Average:** 92/100 | **Ranking:** 3/158 | **ECE-Only GPA:** 4.00/4.00

PROFESSIONAL SKILLS

Programming Language: C/C++, Python, Verilog; LaTeX, Java, MATLAB
Development Tool: Keil, Altium Designer, Vivado; Android Studio, Docker, Linux, Git, CMake
Experience: Cleanroom (In 2023 Spring Semester)

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

AIoT Smart ICs & Systems Lab @ UESTC — Chengdu, PR China
Research Intern, Advisor: Prof. Jun Zhou — *Oct. 2023 - Present*
- **Separable CNN for Speaker Recognition**
- Designed a speaker recognition algorithm with the time delay neural network (TDNN). By setting up a rational residual network structure and applying a comprehensive speech dataset, the module's equal error rate (EER) is reduced from 14.22% to **0.196%** when full-time enrollment and verification.
- **Hardware-aware Algorithms for Tape Out**
- 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%)

Efficient & Intelligent Computing Lab @ Georgia Tech — Atlanta, USA
Research Intern, Advisor: Prof. Yingyan (Celine) Lin — *May 2023 - Oct. 2023*
- **A Generalized Neural Radiance Field Accelerator for Edge AR/VR**
- Proposed a measurement method for the CPU, GPU, DSP and NPU performance on the Snapdragon 8 Gen 2 Mobile Platform. Implemented the framework first in a Docker container and then using Android Studio IDE with the Qualcomm Innovators Development Kit (QIDK) repository.
- 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**.
- **Benchmark Survey of Reconfigurable Accelerator Co-design**
- Contributed to a benchmark about reconfigurable accelerators by surveying their abilities (including the reconfiguration of PEs, network, compiling/mapping and dataflow) and performances (including flexibility, stability and energy efficiency).

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**
- Reconstructed the Chrome Dino game on a platform called Shader Editor using the Web GPU Shading Language. Designed the game for fast response and precise detection. Proposed a two-step solution for collision detection, which combines Bounding Box (first step) and Detailed Rectangles (second step).
- 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]

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