

# Jinming Ren

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## EDUCATION

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**University of Electronic Science and Technology of China (UESTC)** Sept 2022 — Present

**University of Glasgow, Dual Degree Program** Sept 2022 — Present

- **Major:** Electronic and Computer Engineering; GPA: 3.87/4.0, Ranking: 2/164 (Top 1%).
- **Relevant Coursework:** Signals and Systems, Stochastic Processes, Artificial Intelligence and Machine Learning, Information Theory, Electrodynamics, Digital Circuit Design, etc.
- **Online Course:** Abstract Algebra, Complex Analysis, Differential Geometry, Control Theory, etc.

## RESEARCH

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**GAT-based Multi-Task RL for Robust PVT-Aware Analog Design** Ongoing

*Research Assistant, Jintao Li, UESTC*

- Proposed a GAT-based multi-task Reinforcement Learning framework to optimize analog circuits under diverse PVT corners.
- Modeled PVT conditions as graph nodes, enabling adaptive attention to corner-specific bottlenecks.
- Reduced specific violations by 19× and simulations by 69% on **AnalogGym** benchmarks.

**System-level Co-Design of RISC-V Accelerators for TinyML at the Edge** Ongoing

*Research Assistant, Professor Yun Li, UESTC*

- Designing and implementing hardware-accelerated TinyML kernels that are adaptable and efficient for edge computing using **Chisel**, **Verilog**, **Python** and **C++**.
- Exploring a large multi-dimensional design space using automated methods (e.g. heuristic and evolutionary algorithms) to identify optimal configurations balancing accuracy, energy, and latency.

**Movable Antenna (MA) for Anti-jamming** Feb 2025 — Jun 2025

*Research Assistant, Professor Weidong Mei, UESTC*

- Conducted a heuristic investigation into Anti-jamming through stochastic antenna movement.

## PROJECTS

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**Control and Computer Vision for Autonomous Quadcopter System** Feb 2025 — Jun 2025

- Developed an automatic quadrotor aircraft for objection detection, route planning, and closed-loop flight control.
- Used **ROS2** and **OpenCV** library to implement originally designed computer vision algorithms for real-time landing area detection.

**Design and Visualization of a Complete Single-cycle RV32I CPU Core** Jan 2025 — Mar 2025

- Designed and simulated an entire RISC-V 32-bit CPU from scratch in **Verilog** for RTL simulation and in **Digital Software** for working principle visualization.
- Supported basic peripherals: GPIOs, IIC, UART, etc.
- Implemented a simple boot ROM in assembly, minimal interrupt service for running a Linux kernel.

**Adaptive Markov Entropy Source Encoding** Oct 2024 — Nov 2024

- Originally-designed the second-order Markov Adaptive Encoding (AME) to perform source coding of *the Game of Thrones* using **Python** and **Matlab**.
- Evaluated and compared the performance of AME, Huffman and Fano coding.

<b>CNN for Embedded Systems</b>		Feb 2024 — May 2024
<ul style="list-style-type: none"><li>Integrated a convolutional neural network (CNN) into an MCU using C in MbedOS.</li><li>Enabled smart fall detection, body temperature monitoring and real-time data visualization for patients.</li></ul>		
<b>Human Voice Recognition Smart Car</b>		Sept 2023 — Dec 2023
<ul style="list-style-type: none"><li>Designed and implemented a voice-controlled car on STM32F103 using C standard libraries, supporting actions such as moving forwards/backwards, turning/sliding left/right.</li><li>Led a 4-member team in the project.</li></ul>		
<b>Digital Door Lock for Dormitory</b>		Sept 2023 — Oct 2023
<ul style="list-style-type: none"><li>Designed and implemented an embedded digital door lock system in C++ on Nucleo L432KC MCU.</li><li>Developed basic functions include manually setting up password, automatically lock for repeated wrong passwords, OLED message displaying, etc.</li><li>Led a 3-member team in the project.</li></ul>		
<b>First Place in “XinTong Cup” Electronic Design Competition</b>		Sept 2022 — Oct 2022
<ul style="list-style-type: none"><li>Designed and implemented a 8-key music player using register-based development in Keil C51 on STC89C52 MCU.</li><li>Developed functions includes single note/chord playing, recording, replay and rewind capability, etc.</li></ul>		
<b>RELEVANT SKILLS</b>		
<b>IT Skills</b>	Latex, Quarto Markdown, Typst, Manim, Github, Microsoft Office.	
<b>Programming Language</b>	C/C++, Python, Matlab, Verilog, Chisel, RISC-V Assembly.	
	Native Chinese, Fluent English.	
<b>AWARDS</b>		
<b>Top Academic Scholarship of UESTC (Top 5%)</b>		Dec 2023, Dec 2024
<b>China National Scholarship (Top 3%)</b>		Dec 2024
<b>First Prize: 7th National College Art Exhibition and Performance</b>		Sept 2024