



Jinming Ren

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EDUCATION

- **University of Electronic Science and Technology of China (UESTC)** (*Sept 2022 — Present*)
 - Student, School of Communication Engineering.
- **University of Glasgow, Scotland, UK** (*Sept 2022 — present*)
 - Student, School of Electronic and Computer Engineering.

ENGAGED PROJECTS

System-Level Co-Design and AI-EDA of RISC-V Accelerators for TinyML at the Edge (*On going*)

- **Main tools:** C++, scala, python, verilog.
- Designing and implementing hardware-accelerated TinyML kernels that are adaptable and efficient for edge computing scenarios.
- Exploring a large multi-dimensional design space using automated methods (such as heuristic or evolutionary algorithms) to identify optimal configurations balancing accuracy, energy, and latency.
- Conducted under the supervision of [Prof. Yun Li](#).

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

- **Main tools:** python, ROS2.
- Automatic quadrotor aircraft for objection detection, route planning, and closed-loop flight control.
- 6-people team.

RV32I CPU Core for Education (*Jan 2025 — Mar 2025*)

- **Main tools:** verilog, VHDL, Digital, Kicad, iCESuger FPGA.
- Simulated an entire RISC-V 32 bit CPU *from scratch* in Digital Software (for visualization).
- The working principle of CPU has never been so tangible and visualized before.
- Support basic peripherals: GPIOs, IIC, UART, etc.
- Simple boot ROM in assembly, minimal interrupt service for running a Linux kernel.

AME Source Coding (*Oct 2024 — Nov 2024*)

- **Main tools:** python, matlab.
- Final project of **Information Theory** Course.
- Second-order Markov Adaptive Approximation (AME) to source-coding *the Game of Thrones*.
- Performance evaluation of Huffman and Fano coding.

CNN for Mbed (*Feb 2024 — May 2024*)

- **Main tools:** python, C++.
- Convolutional Neural Network (CNN) integration into an MCU.
- Smart fall detection, body temperature monitoring and real-time data visualization for patients.

A Study of Generalized Fields and Extension to Higher Dimensions¹ (*Oct 2023 — Feb 2024*)

- A theoretical study of generalized natural fields and behaviours in higher dimensions.

- Largely motivated by my tutor Mr. [Yidong Liu](#) and my friends and completed by myself.

Human Voice Recognition Smart Car (*Sept 2023 — Dec 2023*)

- **Main tools:** C++, STM32F103C8T6 MCU, etc.
- Leader of a 4-people team.
- English words recognition for car movement controlling.
- Basic operations: Moving forwards and backwards, turning or sliding left and right, etc.

Smart Door Lock for Dormitory (*Sept 2023 — Oct 2023*)

- **Main tools:** C++, Nucleo L432KC MCU, Mbed library, OLED screen, etc.
- The final project of the Microelectronic System course.
- Opening the dormitory door by password input.
- Basic functions: Setting up password manually, automatically lock for repeated wrong passwords, OLED message displaying, etc.

“XinTong Cup” Electronic Design Competition: Electronic Music Player (*Sept 2022 — Oct 2022*)

- **Main tools:** Keil C51, STC89C52RC MCU, etc.
- Leader of 3-people team.
- A simplified 8-key music player using register-based development on a 8-bit MCU by ST company.
- Functionality: Single note playing, chord playing, recording ability, replay and rewind capability, etc.

ACADEMIC RECORD²

Table 1: **Detailed scores** of core courses (**GPA: 3.88/4.00**, **rank: 5/168**)

Year	Subject	Score (Full mark: 100)
Year 1	Calculus I/II	91/92
	Linear Algebra	84
	C Programming	95
	Physics I	88
Year 2	Physics II	96
	Signal and Systems	91
	Probability and Statistics	92
	Microelectronic Systems	92
	Embedded Processors	95
	Circuit Analysis and Design	95
	Computer Network	94
Year 3	Academic English	89
	Information Theory	91
	Principles of Communication	95
	Digital Circuit Design	86
	Machine Learning	86
	Stochastic Signal Analysis	82
	Communication Circuit Design	92
	Electromagnetic Field and Microwave Technology	88

RELEVANT SKILLS

- **IT Skills:** Latex, (Quarto) Markdown, Typst, [Manim](#), [Github](#), Microsoft Office.
- **Computer Programming:** C/C++, Matlab, Python.
- **Embedded System Programming:** RISCv assembly, verilog, VHDL, STM89C5x (Standard lib), Keil C51.
- **Math:** Self learned ([Abstract Algebra \(Harvard E-222\)](#)), [Point-set Topology](#), [Measure Theory](#), [Complex Analysis \(MIT 18.04\)](#), [Functional Analysis](#), Elementary [Differential Geometry](#), [Lie Groups and Lie Algebras](#) (*still learning*).
I didn't focus on all epsilons and deltas, but their motivations and application potentials.
- **Team Work:** Zoom meeting, Notion team, Microsoft team.
- **Language:** GRE [score](#) 317. No problem in understanding English lectures, native Chinese.

OTHERS

Awards

- **First Prize in the [7th National College Student Art Exhibition and Performance](#):** Symphony No. 4 in D minor, Op. 120, 4th movement, by Robert Schumann. (In violin section)
- **Top Academic Scholarship of UESTC:** First-class Scholarship for the past two years.
- **China National Scholarship, 2024:** Prestigious national award granted for academic excellence, leadership, and overall achievement.

Interests

- **Classical Music Enthusiast :** Violin player in UESTC symphony orchestra, votary of legendary composer Gustav Mahler and Johann Sebastian Bach.
- **Badminton Lover :** Sports always refreshes me at any time.
- **Learning Everything :** I believe everything is *learnable* by *First Principle Thinking* and *curiosity*.
- **Volunteer Work :** Enjoy helping others. Over 15 hours of volunteering.