



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

Movable Antenna (MA) for Anti-jamming (*Just start*)

- **Main tools:** matlab.
- A heuristic investigation into Anti-jamming through stochastic antenna movement.
- Conducted under the supervision of [Prof. Weidong Mei](#) at UESTC.

Computer Vision (CV) for Quadrotor Aircraft (*Just start*)

- **Main tools:** matlab, C/C++, python, verilog.
- Automatic quadrotor aircraft for objection detection, robotic arm manipulation, and closed-loop flight control.
- 6-people group.

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

- **Main tools:** verilog, VHDL, Digital, Kicad, iCESuger FPGA.
- Simulate an entire RISC-V 32 bit CPU in verilog and Digital Software.
- Support basic peripherals such as GPIOs, IIC, UART, VGA, 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.

Auto Door Opener 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 Keyboard 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** out of 4.00)

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
	Academic English	89
Year 3	Information Theory	91
	Principles of Communication	95
	Digital Circuit Design	86
	Machine Learning	86
	Stochastic Signal Analysis	82

RELEVANT SKILLS

- **IT Skills:** Latex, (Quarto) Markdown, Typst, Manim³, Github⁴, Microsoft Office.
- **Computer Programming:** C/C++, Matlab, Python.
- **Embedded System Programming:** RISCv assembly, 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:** No problem in understanding English lectures, GRE **score** 317, 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.