

Erjing Luo (罗尔竟)

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BIOGRAGHY

I am a senior undergraduate student majoring in Electronic Information Engineering at Beijing Institute of Technology (BIT) in China, expected to graduate in June 2023. My research interests include FPGA-based reconfigurable computing, domain-specific architecture for deep learning and VLSI design. At present, I am aiming for a MSc position in 2023 Fall.

EDUCATION

Beijing Institute of Technology (BIT),

School of Information and Electronics

B.Eng in Electronic Information Engineering

Sep 2019 – Present

Beijing, China

Expected in June 2023

- First-3-year GPA: **91.05/100**
- First-3-year Academic Performance Rank: **14/389 (top 3.6%)**
- Related Courses:

Mathematical Analysis for Engineering I	100	C Language Programming	98
Mathematical Analysis for Engineering II	90	Data Structure and Algorithm Design (Described in C++)	92
Linear Algebra A	99	Design of Embedded System Based on ARM Processor	100
Probability and Mathematical Statistics	95	Fundamental of FPGA and SOPC Design	94
College Physics A I	98	Physics of Semiconductor	94
College Physics A II	100	Theory of Electromagnetic Fields A	92
Signal and Systems A	98	Integrated Circuits Engineering	88

RESEARCH EXPERIENCE

- **State Key Laboratory of Computer Architecture, Institute of Computing Technology, Chinese Academy of Sciences**
Mar 2022 – Present
Beijing, China
Research Assistant
Topic: FPGA-based reconfigurable computing for deep learning
Supervisor: Dr. Cheng Liu, Associate Professor
 - Explore the methodology of hardware-aware neural architecture search;
 - Design low bit-width DSP-unit packing techniques for efficient inference;
 - Explore approximate computing for CNN models;
 - **The 3rd place in the 2022 DAC System Design Contest, San Francisco, USA, Jul 2022. ([Results](#))**
- **Microelectronics Technology Laboratory, Beijing Institute of Technology**
Nov 2021 – Oct 2022
Beijing, China
National College Student Innovation and Entrepreneurship Project
Project Leader
Topic: Real-time vehicle license plate recognition system based on FT2000/4 processor
Supervisor: Ms. Lei Zhang, Lecturer and Technician
 - Design high performance JPEG encoder and decoder;
 - Optimize vehicle license plate recognition algorithm;
 - Explore learning in frequency domain for computer vision, and fuse it into our JPEG encoder-to-decoder dataflow to accelerate the whole system;
 - **National first prize in the 6th China College IC Contest (top 2% designs), Chongqing, China, Aug 2022.**

INDUSTIAL EXPERIENCE

➤ **Nanjing IC Training Base
Summer Training Program**

*Jul 2021
Nanjing, China*

Trainee

- Training for EDA tools (e.g. Design Compiler, VCS, and Cadence Virtuoso);
- Design methodology of low-power VLSI design;
- RISC-V SoC design case study and analysis.

SELECTED AWARDS & HONORS

- National Third Prize of the 4th National College Students Embedded Chip and System Design Contest (Chip Design Track), *Nanjing, China, Oct 2021.*
- Second Prize of the 7th China International ‘Internet Plus’ College Students Innovation and Entrepreneurship Contest (in Beijing Area), *Beijing, China, Aug 2021.*
- Second-class Scholarship for Academic Excellence, *Beijing Institute of Technology, Apr 2022, Nov 2021, Jun 2021, Nov 2020, May 2020.*
- Third Prize of the 37th National Physics Contest for College Students (partial areas), *Beijing, China, Dec 2020.*

SELECTED COURSE PROJECTS

➤ **Mail Box System and Encryption Transmission**

Dec 2021

Tutor: Prof. Senlin Luo

- Design a mail box system based on SMTP and POP3;
- Utilize Advanced Encryption Standard to encrypt email;
- Compatible to various common-used mail box service providers.

➤ **FM Music Synthesizer Based on S5PV210 Processor**

Oct 2021 – Nov 2021

Tutor: Prof. Hai Li

- Design a parameterized FM music synthesizer to imitate different instruments;
- Optimize the synthesizer’s implementation on resource-limited embedded system.

➤ **Simulation of a Microwave Dryer**

Apr 2021 – Jun 2021

Tutor: Prof. Wu Ren

- Design a microwave dryer inspired by slotted waveguide antenna;
- Adjust and optimize design parameters through HFSS-based simulation.

SKILLS

- Programming Languages: C/C++, Python
- Hardware Description Languages: Verilog, VHDL
- Software & Tools: Matlab, Vivado, Vivado HLS, Pytorch, Design Compiler, Virtuoso, Modelsim, HFSS
- English: IELTS: 7.0 CET6: 580