

Ziqi Yuan

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EDUCATION

Cornell University, Ithaca, NY, US

Expected Graduation: *Dec 2023*

B.S., Electrical and Computer Engineering; Computer Science | GPA: 3.88

M.S./M.Eng., Electrical and Computer Engineering (Expected Entry Term: *Fall 2024*)

Relevant Coursework

- Analog Integrated Circuit Design, OOP and Data Structures, Complex Digital ASIC Design, Introduction to Microelectronics, Advanced High-Speed and RF Integrated Circuits
- In Progress: Power Electronics, Machine Learning, Computer Graphics

EXPERIENCE

Versatile Electronic Systems Lab, *Undergraduate Research Assistant*

June. 2022 - Present

- Designed and tested polarization, transmit, and receiver circuitries for the coils of an Earth's Field NMR system that could be used to estimate the water content of underground crops.
- Modified and soldered PCBs for the receiver circuitry to amplify and filter the received signal in the order of a few microvolts at the expected frequency. Implemented a pre-amplifier, a 4th order Butterworth filter, and a final amplifier with an adjustable gain in the receiver.
- Integrated the device with a FRDM-K64F board to control the signal sequence. Configured Python code to send various transmit sequences. Analyzed the received signal with MATLAB.

Engaged Internet of Things Project Team, *Member*

Sept. 2021 - Present

- Designed circuit schematics for appliance level metering to measure real-time power consumption of devices through the IoT network. Designed and tested the corresponding PCBs.
- Assembled metering equipment that read data from current transformers and sent data with a Feather M0 microcontroller. Modified Python and Arduino code for the data transmission.
- Designed labs and prepared lab handouts for the intro IoT course, including tutorials for C++ coding, sensor data transmission over LoRaWAN, and data retrieval and analysis with Python. Helped with students' final community engagement projects, such as community food cabinet monitoring and digital agriculture systems.

Op-Amp Design, *Course Project*

Nov. 2022

- Designed a 2-stage, differential-input amplifier and completed the layout in Cadence Virtuoso. Implemented telescopic cascode in the first stage and common source in the second stage.
- Utilized gain boosting and achieved an open loop gain of 108 dB. Attained a phase margin of 91.3 degree and a unity gain bandwidth of about 80 MHz. Optimized the area and power trade-off and achieved a 2.1 mW DC power.

Undergraduate Teaching Assistant

Feb. 2022 - Present

- (CS) Data Structures and Functional Programming
- (ECE) Introduction to Microelectronics; Digital Logic and Computer Organization

SKILLS

Programming Languages: C, C++, Java, Python, MATLAB, OCaml, Verilog, Typescript

Languages: Chinese (native), English (fluent), Japanese (intermediate)

Software: Cadence Virtuoso, LTSpice, KiCad, Arduino, Fusion 360, COMSOL