Qijia (Agnes) Li

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EDUCATION

Cornell University, College of Engineering   Aug 2019 - Dec 2023

Bachelor of Science, Electrical and Computer Engineering   Ithaca, NY, USA

- GPA: 4.014/4.3 (Dean's list: Fall 2019 - Spring 2022)
- Relevant Coursework: Introduction to Circuits for Electrical and Computer Engineers, Intelligent Physical System, Digital Logic and Computer Organization, Embedded System, Signals and Systems, Introduction to Microelectronics

RESEARCH EXPERIENCE

Explore Piezoelectric-Resonators-Based DC-DC Converter   Oct 2021 - Present

Undergraduate Researcher, Member of Professor Afridi's Group   Ithaca, NY, USA

- Explored the use of piezoelectric resonators in power converters to achieve high power density and high efficiency.
- Read the paper "*Enumeration and Analysis of DC-DC Converter Implementations Based on Piezoelectric Resonators*". Completed the calculations described in the paper using periodic steady-state analysis.
- Improved the paper's design to achieve better performance. Used PLECS and SIMetrix/SIMPLIS to simulate converter topologies and build corresponding feedback control system.

Light-Based Isolated High-Voltage-Conversion-Ratio Compact Power Converters   Jun 2020 - Oct 2021

Undergraduate Researcher, Member of Professor Afridi's Group   Ithaca, NY, USA

- Explored methods of utilizing light to convert high voltage to low voltage while achieving higher efficiency and smaller size than conventional power converters.
- Used LTspice to make 3 theoretical models of the power converter and tested their efficiencies when the output power is 1W. Analyzed the power loss of the converter models.
- Communicated with companies that produce the electronic components we needed and bought the components.

WORK EXPERIENCE

Course: Introduction to Microelectronics   Jan 2023 - Present

Undergraduate Teaching Assistant   Ithaca, NY, USA

- Cooperated with other TAs and the professor to enhance laboratory experiment design for an engaging learning experience for students.
- Graded assignments and exams, led lab sessions (180 minutes biweekly), and assisted students with homework and lad report questions.

SONOS   Jul 2022 - Dec 2022

Electrical Engineering Co-op - Power and Audio, Electronic Product Development Team   Boston, MA, USA

- Designed a flyback transformer that will be used in a product with given output requirements. Wrote flyback transformer specifications and ordered samples from the vendors.
- Designed the entire flyback converter circuit including the auxiliary winding circuit and the feedback circuit. Drew the flyback converter schematic with OrCAD.
- Tested the performance of the flyback converter and debugged its circuit with the use of the evaluation board.

Course: Introduction to Computing with Python   Aug 2021 - Dec 2021

Undergraduate Consultant   Ithaca, NY, USA

- Graded assignments and exams, held office hours (120 minutes per week) and lab sessions (100 minutes per week), and answered students' questions on Ed discussion.

PROJECT EXPERIENCE

Course Project: Intelligent Physical System   Aug 2021 - Dec 2021

Member of a Group of 2 Students   Ithaca, NY, USA

- Built a robot that could detect and measure the IR signals of different frequencies, collect sounds and analyze their frequencies using Fourier analysis, navigate through mazes based on the right wall follower algorithm, and send data to the base station to be displayed.
- Built a base station that could receive the data sent by the robot and employ a 4-digit 7-segment board to display the numbers.
- Project Github Page: https://pages.github.coecis.cornell.edu/ql268/ql268.github.io/

SKILLS LIST

- **Programming Language and Software:** Python, Java, C/C++, MATLAB (basic), Microsoft Office (Word, Excel, PowerPoint), assembly language (basic), Verilog (basic)
- **Technical Tools:** LTspice, PLECS, SIMetrix/SIMPLIS, OrCAD (basic), COMSOL (basic), L-Edit (basic)
- **Language:** Chinese (Native), English (Fluent)