Jerry Wang

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EDUCATION

Unveirsity of Ottawa, Canada,
M.A.Sc Honours, Electrical and Computer Engineering — Jan 2025 - Apr 2026
Supervisor Prof. Emil Petriu

B.A.Sc Honours, Electrical and Electronic Engineering — Sep 2019 - Dec 2024

COURSEWORK

Computer Architecture	Signal and System Analysis
Electronics	Digital Signal Processing
Microwave Circuits	Control Systems
Optoelectronics and Optical Components	Communication Systems
Electromagnetic Engineering	Random Signals and Systems
Ordinary Differential Equations	Research In Engineering Design
Linear Algebra	Engineering Computation(C)

PUBLICATIONS

Jerry Wang, Jason Foster. *Advancing Engineering Design through Comparative Analysis of Environmental Sensors in Microcontrollers: Case Study in Automating Machines to Control Indoor Temperatures using Machine Learning.* CEEA 2024

Technical SKILLS

Languages: JavaScript, C/C++, Python, HTML/CSS, PHP/MySQL, MatLab
Technologies: AWS (Lambda, API, Step Fns), Azure, Git, React, Redux, Node.js, MongoDB, Docker.
Hardware: Linux, RTOS, I2C, SPI, UART, CAN, Ethernet, Wi-Fi, BLE

RESEARCH EXPERIENCE

Research Assistant — University of Ottawa
January 2024 - Present — Faculty of Engineering
Supervisor: Prof. David Bruce

- Utilized a micro-controller and a modified Creality Ender 3 printer to develop an electroplating control system, integrating hardware and software to position electrodes dynamically, enhancing the electrochemical reaction process.
- Achieved initial results demonstrating precise control of electrode spacing and cell potential, with performance indicators on par with advanced electroplating systems.

Research Assistant — University of Ottawa
May 2023 - December 2023 — Faculty of Engineering
Supervisor: Prof. Jeremey Kerr and Prof. Jason Foster

- Technical Research and Experimentation: Spearheaded the integration of ESP32 microcontrollers with environmental sensors (temperature, humidity, PM2.5, ozone, etc.), designing and conducting experiments to evaluate machine learning models for real-time indoor climate control, resulting in enhanced energy efficiency.
- Data Analysis and Model Training: Utilized Python and data science tools for processing and analyzing large datasets from sensors, applying time series analysis and machine learning techniques (Random Forest, Neural Networks) to predict optimal climate control strategies, achieving up to 20% improvement in energy efficiency.
- Innovation and Application: Developed a web-based user interface for real-time monitoring and adjustment of indoor and outdoor environmental conditions, demonstrating the potential of sensor fusion technology and machine learning in smart building and sustainable environmental management systems.

- First author publication accepted to CEEA 2024

INDUSTRY EXPERIENCE

System Test Design Engineer Intern — Apple Inc.
May 2024 - Aug 2024 — ShenZhen, China

- Automated Optical Inspection(AOI): Responsible for the Design for Manufacturability(DFM) of AOI systems, developed machine learning algorithms (Objective Detection and Anomaly Detection) to inspect Graphic Database System (GDS) data. Successfully captured true GDS instances during mass production, achieved an overkill rate and escape rate of 0
- Tool Development: Product Owner for an automated reporting tool to help inexperienced CM DRI,PQM/STM deliver more accurate machine learning results in Apple's preferred data format. The web application was developed using React.js for the front end, Django for the back end, and Redis,MySQL for efficient data management.
- Data Generation: Leveraged Tableau to access and integrate data from Apple's internal data website, enabling advanced data visualization and in-depth analysis to uncover actionable insights.

System Test Design Engineer Intern — EcoSafeSense
May 2023 - Present — Ottawa, Canada

- The ARM Cortex-M micro-controller is utilized in the design of an IoT sensor that integrates multiple sensor elements. By combining BLE and Wi-Fi technology for wireless data transmission. The underlying driver is developed using C++ and RTOS.
- Develop mobile applications using Java (Android) and Swift (iOS) and utilize Python (Pandas) for efficient processing and analysis of environmental data.
- An environmental data monitoring system was created using HTML, JavaScript and CSS to achieve real-time monitoring and data analysis.

System Test Design Lead Intern — Apple Inc.
April 2022 - September 2022 — Shanghai, China

- Mix Cell Tester: Responsible for overseeing the product function design and circuit design process, from prototype development to PVT. The tester facilitates the compliance of 8 battery CMs with ERS , ensures data protection and test coverage requirements while saving a $45 million budget and improving test efficiency by 14%
- Data Automation:: Use Python and Tableau to automate data uploads for battery CMs across 8 Apple LoBs, support factories and Apple reliability teams in securing test data, and enhance data processing efficiency by 13%

Risk Consultant Intern — KPMG LLP
June 2021 - August 2021 — Beijing, China

- Developed a compliance analysis tool using Python, Pandas, and MySQL for a German car brand, processing over 4 million data rows and identifying key compliance violations.
- Led the enhancement of a UK car brand's resource management system using Python, Pandas, and NumPy, improving system approval efficiency by 23% and reducing financial errors by 16%.

Teaching

Teaching Assistant — University of Ottawa
September 2022 - Present — Ottawa, Canada

- Led technical design labs, office hours, and grade student assignments for an engineering design program of over 200 students
- Engineering Design(GNG1103)
- Introduction to Product Development and Management for Engineers and Computer Scientists(GNG2101)