

# Justine Shaw, MSc. Electrical and Computer Engineering

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## PROFILE

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Multidisciplinary engineer and technical professional with expertise in electronics, robotics, software development, and systems support. Experienced in troubleshooting, automation, embedded hardware, and full-stack application development. Skilled in Python, Bash, C++, MERN stack, MATLAB, networking, and AV systems. Strong communicator with a track record of creating clear documentation for technical and non-technical audiences. Authorized to work in Canada; available for hybrid and on-call work.

## TECHNICAL SKILLS

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**Programming & Scripting:** Python, C++, C, Bash, SQL, MATLAB

**Web & Full-Stack Development:** MERN stack (MongoDB, Express, React, Node.js), REST APIs, HTML/CSS, basic UI/UX

**Systems & IT Support:** Windows, macOS, Linux, Microsoft 365 (Teams, Outlook, OneNote), device setup & troubleshooting, ticketing systems (ITSS Service Desk, ClickUp, Jira(Familiar))

**Networking:** TCP/IP, DNS, VPN, Wi-Fi diagnostics

**Embedded & Hardware:** Arduino, Raspberry Pi, microcontrollers, robotics platforms, IoT protocols, sensors, motors, AV setup, custom PCBs (EagleCAD), 3D printing prototyping (Onshape)

**Tools & Platforms:** Git, CI/CD, Azure DevOps, Canva Pro

## PROFESSIONAL EXPERIENCE

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**Mediation and Application Systems Engineer** – *Digicel Jamaica (Sept 2020-Sept 2022) - Telecommunications*

- Provided technical support across hybrid IT environments (devices, accounts, networks) for users with varying technical literacy.
- Responded to live system escalations, restored service reliability, and communicated updates to stakeholders.
- Automated workflows using Python and Bash, reducing manual effort and errors.
- Authored clear technical documentation, guides, and knowledge base articles.
- Managed tickets and workflows using ITSS Service Desk, ClickUp, and OneNote.

**Research Student – Systems & Controls** – *University of Waterloo (Sept 2022-Aug 2024)*

- Developed expertise in robotics, control theory, motion dynamics, embedded systems, and data analysis with MATLAB.
- Prototyped robotic hardware using 3D printing and Onshape; built simulation and testing tools for bimodal robot swarms.
- Produced technical diagrams, graphs, experimental visuals, and documentation for presentations and publications.
- Co-authored research paper “**Design and Density Control of a Swarm of Bimodal Particles**”, accepted at *DARS 2024* (Springer).

## **Electronics Engineer – Mona Tech Engineering Services Ltd. (Jul 2020 - Sept 2020)**

- Conducted system assessments, routine maintenance, and troubleshooting of plant control systems.
- Maintained accurate technical documentation and assisted with safety systems configuration.
- Supported technical staff with hardware and software setup and troubleshooting.

## **EDUCATION**

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**Masters of Applied Science, Electrical and Computer Engineering** - Systems and Controls - University of Waterloo, ON (Sept 2022-Aug 2024)

**Bachelor of Science, Electronics Engineering** - University of the West Indies Mona, Kingston (Sept 2017-Jul 2020)

## **VOLUNTEER EXPERIENCE**

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### **STEM Tutor – Math & Science (Grades 8–12)**

**Adventure for Change (Waterloo)** - Oct 2024 – Present

- Tutor students weekly in math and science, simplifying complex concepts for learners at different levels.
- Adapt teaching methods to different knowledge levels, similar to supporting users with varying technical literacy.

### **AV Technical Support Volunteer**

**Local Organizations (Jamaica & Waterloo)** - 2021 – Present

- Provide hands-on support with audiovisual equipment, setup, and troubleshooting.
- Manage equipment inventory, coordinate usage, and support live events.
- Creation of presentation slides, bulletins, visual programs and promotional graphics using Canva Pro.

## **NOTABLE PROJECTS**

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### **Customizable Near Field Communication (NFC) Reader with Web and Android Application**

- Developed a final-year Electronics Engineering project integrating hardware and software for NFC-based authentication.
- Built NFC reader with ATMEGA1284 and connected to a Raspberry Pi 4 server for real-time updates.
- Developed a MERN stack application (MongoDB, Express, React, Node.js) with full CRUD capabilities and React.js front-end.
- Programmed embedded firmware on Arduino for reliable communication with cards, fobs, and smartphones.

**IEEE Southeast Conference Robotics Competition (USA) (2019, 2020)**

- Designed and fabricated **custom PCB boards** using EagleCAD; hand-soldered and tested electronic components.
- Integrated and wired hardware systems including sensors, motors, wheels, motor drivers, and microcontrollers.
- Conducted testing with multimeters, crimping, and troubleshooting to ensure competition-ready performance.
- Served as **IEEE Student Branch Chair (2020)**, leading team coordination and technical planning.

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**ADDITIONAL INFORMATION**

- Authorized to work in Canada
- Valid Ontario G-class driver's license
- Available for hybrid and on-call work