Justine Shaw, MASc. Electrical and Computer Engineering

Waterloo, ON | 226-899-8414 | justinearshaw@gmail.com | www.linkedin.com/in/justinearshaw | **Portfolio**

PROFILE

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

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, SharePoint), 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

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 bi-modal 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

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

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

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.

ADDITIONAL INFORMATION

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