

Joseph Pongonthara

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CAREER OBJECTIVE

Solutions-driven mechatronics engineering graduate with proven experience in software development, system architecture, and analytical problem-solving. Passionate about leveraging technical expertise, strategic thinking, and cross-functional collaboration to deliver impactful solutions in dynamic, data-intensive environments.

EDUCATION

University of Waterloo

Bachelor of Applied Science in Mechatronics Engineering

St. Michael's Choir School

Valedictorian, Student Council President

Waterloo, Canada

Graduated June 2025

Toronto, Canada

Graduated June 2019

TECHNICAL SKILLS

- **Languages & Programming:** Python, Javascript, C++, Embedded C, SQL, HTML, CSS, MATLAB
- **Web & Software Development:** React.js, REST APIs, Next.js, TypeScript, Git, Client-Server Architecture, Responsive Design, Web Scraping
- **Tools & Frameworks:** Palantir Foundry & AIP, Azure Cosmos DB, PostgreSQL, Supabase, Arduino, UART & I2C Sensor Communication, Simulink
- **Core Competencies:** Full-Stack Development, Software Architecture, Distributed Systems, Real-Time Systems, Algorithm Design, Data Structures, Database Management

RELEVANT EMPLOYMENT HISTORY

Intern — Tenuto Labs

June 2025 - Present

- Building and deploying two AI-powered prototypes for two use cases at a professional services firm.
- Responsible for backend architecture design alongside migration documentation for the firm's Azure-based backend services to deliver secure, real-time AI solutions & scalable solutions.
- Assisting in the front end integration between the Next.js & React system to the prototype's Supabase backend
- Conducted technical discovery sessions and requirements gathering with stakeholders, including C-level executives, iteratively translating user feedback into clearly defined MVP features and functional software solutions.
- Contributed to API architecture and internal tooling decisions across frontend and backend components.

INDEPENDENT ENGINEERING & SOFTWARE INITIATIVES

Software Engineering — Personal Pro Shop (Web Application)

- Built a full-stack web application to recommend personalized tennis gear leveraging user inputs & large language models.
- Designed a React front end and integrated it to Foundry backend services via Palantir's REST API to retrieve AI-powered recommendations.
- Managed backend configuration and API-based integrations, demonstrating proficiency in enterprise-grade data platforms.
- Managed backend configurations and secure data integrations via Palantir's Foundry platform, demonstrating expertise in high-volume data handling and distributed software architecture.

Mechatronics Engineering — Bike Safety Device

- Designed and prototyped a sensor-based safety system using a Time-of-Flight (T.O.F.) sensor and Bluetooth communication module for real-time proximity detection.
- Developed real-time embedded firmware for sensor-based safety devices using ARM-based microcontrollers, integrating Bluetooth modules and sensor drivers for immediate user feedback.

Firmware Engineering — Ball & Beam Controller Design

- Developed and implemented two discrete-time controllers for dynamic system stabilization, ensuring compliance with system performance metrics (error, overshoot, settling time, and input voltage).
- Applied the Input Output Parametrization (IOP) method to optimize performance, showcasing expertise in system modeling, stability analysis, and closed-loop control tuning.

PROFESSIONAL EMPLOYMENT HISTORY

Mechanical Engineering Intern

Callidus Engineering, Jan – Aug 2024

Mechanical Engineering Intern

Quasar Consulting Group, Jan – Apr 2022, Sep – Dec 2022

Sales Engineer

HTS Engineering, May – Aug 2021