

ALIREZA AZAD

PRODUCT DEVELOPMENT ENGINEER

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Product Development Engineer with 3+ years of experience developing commercial and industrial air purification systems. Hands-on expertise in prototyping, sensor integration, software and PLC controls, verification and validation, certification coordination, and production line transfer. MEng and BEng in Biomedical Engineering.

PROFESSIONAL EXPERIENCE

Product Development Engineer

May 2023 - Present

Surgically Clean Air / Toronto, ON

- Led the Canada-to-US production line relocation for the Atomik 1.0 industrial air purifier, now in full production. Established layouts, assembly instructions, test stations, and quality control processes; trained 3 production staff.
- Built 3 working prototypes for the next-generation Atomik 2.0 industrial air purifier, designed for 17,000 CFM airflow; owned software, user interface, and controls development within a 3-person engineering team.
- Developed Python interfaces on Raspberry Pi and migrated controls to a Maple Systems programmable logic controller (PLC) using MAPware 7000, including sensor-driven fan control and power calculations.
- Integrated air quality and differential pressure sensors via I2C and Modbus; tested fan controls, sensor-loss alerts, filter maintenance logic, and custom circuit boards and firmware with an electronics supplier.
- Built human-machine interface (HMI) data logging, trend displays, USB CSV export, runtime tracking, and local-network remote access; translated customer feedback into engineering requirements.
- Served as sole Intertek contact for ETL electrical safety certification work, coordinating technical submissions, critical component lists, and compliance follow-up.
- Produced 100+ client air quality reports supporting sales and product evaluation; contributed as co-inventor on a product-related invention.

Co-Founder

Jul 2023 - Present

Stoop Inc. / Stoop and ZoningPal / Toronto, ON

- Built and launched the Stoop iOS app using Swift and Firebase; developed ZoningPal's frontend, backend services, data workflows, and automated zoning reports.
- Translated customer discovery into product requirements and iterations; led technical execution, live demos, pricing, and operations across two bootstrapped products.

Clinical Engineering Intern

Sep 2022 - Dec 2022

University Health Network / Toronto, ON

- Supported medical equipment procurement through needs and cost analysis and RFP preparation; created CAD room drawings and assisted with radiation dose calculations.
- Built a surgical instrument tracking database and developed surgical laser safety e-learning modules and training videos for clinical staff and technicians.

TECHNICAL SKILLS

Engineering: Prototyping, systems integration, verification and validation, test plans, bills of materials (BOMs), standard operating procedures (SOPs), manufacturing transfer, supplier coordination

Controls and software: Python, Raspberry Pi, PLC/HMI programming, MAPware 7000, ladder logic, Modbus, I2C, sensor integration, electrical wiring, Swift, Firebase

EDUCATION

Toronto Metropolitan University (formerly Ryerson University)

Master of Engineering, Biomedical Engineering

2023

Bachelor of Engineering, Biomedical Engineering

2021