ATEF ELSHARKAWY

Automation & Software Engineer · Founder, AAA Automation

atef.elsharkawy@aaaautomate.com · www.aaaautomate.com · Ontario, Canada & Michigan, USA
linkedin.com/in/atefelsharkawy1 · github.com/Atefelshark

PROFILE

Controls engineer with 5+ years in PLC, HMI and SCADA programming, machine vision, electrical design and automation validation across automotive, food & beverage and wastewater applications in Canada and the United States. Founder of AAA Automation, offering consulting, freelance and contract controls work. Holds an MSc in Artificial Intelligence and builds full-stack engineering software, including a document intelligence platform that audits schematics and equipment inventories automatically.

CORE SKILLS

Controls platforms	Allen-Bradley (Studio 5000), Siemens STEP 7, Emerson, Modicon, Rockwell PlantPAx, ThinManager, legacy PLCs
HMI, SCADA & vision	HMI development, SCADA, Ignition, GE Cimplicity, Matrox Design Assistant, Zebra Aurora (blob, model finder and edge tools)
Design & robotics	AutoCAD Electrical, EPLAN Electric P8, schematics and panel layout, power distribution, FANUC robots
Software & AI	Python, FastAPI, React (Vite), PyMuPDF, PDF and Excel parsing, LLM integration, pytest, Vitest, GitHub Actions, Azure, ArgoCD
Professional	Commissioning, troubleshooting, supplier coordination, safety standards, training skilled trades, status reporting

EXPERIENCE

Founder · AAA Automation — 2023 – Present
Ontario, Canada & Michigan, USA · Consulting, freelance and contract controls work

- Deliver PLC, HMI and SCADA programming, machine vision, automation validation and electrical design for automation projects.
- Scope each project with the client, then take it from design and programming through commissioning, testing and documentation.
- Troubleshoot and improve existing systems: fault finding, alarm reduction and process changes that keep production running.
- Apply software and AI to engineering work, automating design reviews, audits and documentation.

Controls Execution Engineer · General Motors Company — Oct 2023 – Present
Warren, MI, United States

- Test, validate and audit automation systems to meet desired throughput and production requirements.
- Ensure project deliverables are met by suppliers during each project phase.
- Continuously analyze production data and downtime reports to minimize recurring alarms, reduce production roadblocks and increase system efficiency.
- Modify controls logic programs as needed to implement approved process changes.
- Complete the engineering execution checklists required for the equipment buyoff process.
- Escalate persistent issues to senior leadership and track them on the open issues list.
- Take part in safety talks and group meetings to promote safety and reduce the likelihood of incidents and injuries.

Project Controls Engineer · S and T Controls — Mar 2023 – Jul 2023
Kitchener, ON, Canada

- Developed PLC and HMI programs to meet the needs of bodyshop automated operations.
- Reviewed wiring diagrams and schematics of automated manufacturing cells, and debugged logic errors and faults in Studio 5000.
- Coordinated with senior engineers and the project manager to deliver projects on time.

Controls Specialist · Onyx Engineering Inc. — May 2022 – Mar 2023
Windsor, ON, Canada

- Designed and developed PLC, HMI and SCADA programs from process control narratives for food & beverage and wastewater treatment.
- Programmed a wide variety of automation controllers, including Allen-Bradley, Emerson, Modicon and legacy controllers.
- Used AutoCAD Electrical to create control system schematics and design panel layouts.

- Built strong knowledge of plant-wide distributed control systems (DCS) such as Rockwell PlantPAx.
- Responded to field service calls during downtime and resolved customers' production issues, collaborating with senior professional engineers on complex projects.

Machine Vision Engineering Technician · Vista Solutions Inc. — Aug 2021 – May 2022
Windsor, ON, Canada

- Programmed, installed and commissioned vision inspection cameras at customer sites, and performed vision system audits to meet customer standards.
- Used Matrox Design Assistant tools such as blob, model finder and edge detector for sealer, adhesive, weld and options verification.
- Monitored and resolved vision alarms across a GM bodyshop using downtime reports and live alarms on Cimplicity SCADA.
- Trained the plant's skilled trades to respond to vision alarms, troubleshoot and fine-tune vision software; gave status updates in plant engineering meetings.

Controls Technologist · SIDAC Automated Systems Ltd. — Feb 2021 – Aug 2021
North York, ON, Canada

- Designed industrial control systems under senior engineer supervision, using AutoCAD Electrical for schematics, panel drawings and layouts.
- Selected components and hardware based on customer needs and budget, and performed thermal, electrical and power distribution calculations.
- Assisted panel builders with wiring, labeling and assembly before shipping for on-site commissioning.

SELECTED PROJECT

Global Hardware Auditor · Full-stack document intelligence platform — 2026

- Compares multi-hundred-page PDF schematics, Excel-based equipment and network inventories and corporate template standards. A React (Vite) web app and Python FastAPI backend classify each upload by type and scope and run the audits that apply.
- Pipelines for tabular vs. drawing extraction, drawing-to-drawing diffing, template rule compliance (regex plus AI-synthesized rules with deterministic guardrails) and power/load validation, returning pass/fail verdicts, sortable findings and AI-assisted explanations via an LLM gateway.
- PyMuPDF markup engine annotates the source PDFs, with cross-page recovery when page metadata is wrong, and bundles multi-document results into PDFs or zip archives.
- Built for production: background jobs with progress polling and timeouts, Key Vault–backed secrets, pytest and Vitest suites with regression tests, and container delivery through GitHub Actions, Azure Container Registry and GitOps (ArgoCD).

EDUCATION

Master of Science, Artificial Intelligence · University of Leeds, Leeds, United Kingdom — Jan 2024 – Apr 2024

Bachelor of Engineering Technology, Mechatronics · University of Windsor · Graduated with Distinction — Sep 2022 – Aug 2023

Ontario College Advanced Diploma, Electro-Mechanical Engineering Technology · Durham College · Dean's Honours Roll · General Motors of Canada Limited Automatic Award — Sep 2017 – Jun 2020

CERTIFICATIONS & TRAINING (12)

General Motors	Global Common Controls Software (GCCS-2), Global Common Controls Hardware (GCCH-1), Global Robot Specifications (GRS), Lockout and Energy Control
Siemens	Advanced STEP 7 — Level 1 and Level 2
Rockwell Automation	ThinManager Certification, Controls Capability Assessment
FANUC	Handling Tool Operation & Programming
Zebra (Matrox)	Matrox Aurora Design Assistant Application Development
EPLAN	EPLAN Electric P8 Basics for GM (v4.6)
Safety	RESS 101 Safety Training

LANGUAGES & COMMUNITY

Languages: English (fluent), Arabic (native), German (beginner)

Volunteer: Meals On Wheels, Community Care Durham, Whitby, ON (Feb – May 2022)