

Sayed Hayat Ahmad

+1 647 938 5883 | sh2ahmad@uwaterloo.ca | linkedin.com/in/hayatahm/ | hayatahmad.xyz | Mississauga, Ontario

EDUCATION

University of Waterloo

Sep. 2024 – Expected 2029

Bachelor of Applied Science, Computer Engineering

EXPERIENCE

BACKEND ENGINEERING INTERN

Jan 2026 – Present

League Inc.

Toronto, ON

- Owned and delivered the end-to-end multi-tenant authorization POC, wiring SAML login, Auth0 Actions, JWT claims, and Cedar policy evaluation to enable onboarding without new roles.
- Reduced role count by **93%** and shrunk JWT size by **83%** through dynamic role mapping, validation, and claim injection in Auth0 Post-Login Actions.

AI/ML ENGINEERING INTERN

May 2025 – Aug 2025

NETSOL Technologies Inc.

Calabasas, CA

- Automated the processing of over **10,000** financial documents per month by engineering an LLM-based data ingestion pipeline, reducing manual processing time by over **99%** (1 week to 10 minutes).
- Established LLM observability using **LangFuse** to trace and analyze model outputs; leveraged performance analytics to identify and resolve key data extraction issues, improving structured data generation by **40%**.
- Engineered a fraud detection system using **unsupervised** learning to identify anomalous patterns missed by existing business rules, achieving **96%** accuracy across **100,000+** monthly activations.

SOFTWARE ENGINEERING INTERN

Jan 2025 – April 2025

AfterQuery (YC W25)

Remote

- Engineered patches and feature enhancements for foundational Python libraries, navigating large-scale, complex codebases to resolve non-trivial bugs used as training data for frontier LLMs.
- Architected reproducible development environments via Docker to replicate legacy system states and specific dependency trees, ensuring 100% verification of fixes against original issue environments.
- Developed comprehensive test suites covering edge cases and boundary conditions to provide the rigorous reasoning paths necessary to fine-tune AI agents on autonomous software engineering tasks.

PROJECTS

Real-Time Point Cloud Scanner | Raspberry Pi 5, Python, Flask-SocketIO, Three.js

- Built a Raspberry Pi 5 time-of-flight scanner (VL53L1X, I2C) with servo vertical sweeps (0-180 degrees) and 360 degrees stepper rotation to capture full-hemisphere distance scans up to 4m.
- Developed a network-accessible Three.js visualization UI with Flask-SocketIO, streaming scan points in real time with start/stop/pause controls and live progress telemetry (angles, point count).
- Implemented the point cloud pipeline (spherical to Cartesian conversion) and export to PLY and PCD formats, plus a simulation mode to test the full system without hardware.

IoT Spotify Controller | ESP32, C++, Python, RESTful API, SPI/I2C

- Designed an ESP32 Spotify controller with SPI TFT touch UI, quadrature rotary encoder; implemented ISR-driven input decoding and gesture state machines for low-latency control.
- Built a secure captive-portal provisioning flow with an async web server, storing WiFi and OAuth credentials in encrypted NVS to enable setup without reflashing or hardcoded secrets.
- Integrated Spotify Web API with OAuth 2.0 token refresh and resilient REST handling; added lyrics via LRCLIB and OVH with a fallback chain and ArduinoJson memory tuning.

TECHNICAL SKILLS

Languages: Python, C/C++, Go, TypeScript/JavaScript, Assembly, Verilog/SystemVerilog, SQL

Tools: Git, Docker, GCP, Jira, Altium Designer, Linux, Unix, AutoCAD, SolidWorks