

Muath Alsawaier

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EDUCATION

Washington State University

B.S. Software Engineering, minor in Mathematics

Pullman, WA

Expected Dec. 2026

EXPERIENCE

Software Engineering Intern

Mar. 2026 – Present

Schweitzer Engineering Laboratories (SEL)

Pullman, WA

- Built an AcRTAC extension that generates controller logic for up to 16 charge points; implemented settings and dependency validation, IEC-safe identifier handling, schema-driven type conversion, and automated tests.
- Implemented WebSocket routing, handshake and subprotocol validation, and 65,535-byte frame handling for SEL's EV-charging integration; added boundary-focused tests around protocol limits.
- Cut measured GridConnect save times by 14%–77% by batching operations and caching Modbus parsing across configuration saves.
- Built an RTAC context manager that improved load/save times by up to 15x and reduced repeated context setup work across operations.

Software Validation Engineer Intern

May 2025 – Dec. 2025

Alturas Analytics, Inc.

Moscow, ID

- Took technical ownership of developing and validating QSI's TMS and an in-house CIMS, both backed by Microsoft SQL Server, in minimally documented environments; wrote T-SQL checks for data integrity, traceability, audit logs, and end-to-end data flow.
- Developed Python-based automated test tooling for software behavior and lab-equipment integration using pytest, pyodbc, pandas, logging, and CSV/JSON processing; designed risk-based OQ/UAT workflows aligned with 21 CFR Part 11 and GDPR and produced technical documentation for QA and regulatory audits.

Clerical Assistant II

Aug. 2024 – May 2025

Washington State University

Pullman, WA

- Automated data-entry validation and reporting with Python, pandas, and Excel/CSV workflows; validated, transformed, and summarized operational data for budgeting.

PROJECTS

[FaultLine](#) ↗ | *Python, asyncio, FastAPI*

- Fault-injection and chaos-testing platform that tests declared SLOs with bounded faults and reports evidence-backed results.

[API Contract Tester](#) ↗ | *Python, FastAPI, SQLAlchemy, OpenAPI*

- Checks live API responses against schemas, measures field drift, and flags breaking changes.

[CodeRAG](#) ↗ | *Python, NumPy, Ollama*

- Local code assistant with AST-aware chunks, vector retrieval, and source citations by file, symbol, and line.

TECHNICAL SKILLS

Languages: Python, JavaScript, C#, C/C++, SQL/T-SQL, IEC 61131-3 Structured Text

Frameworks & Data: FastAPI, asyncio, SQLAlchemy, Pydantic, pandas, NumPy, PostgreSQL

Web & Cloud: AWS, React, Flask, Django

AI/ML & Agents: AMD ROCm, PyTorch, vLLM, llama.cpp, AWQ, GGUF, RAG, Spec-driven agentic workflows

Protocols & Industrial: REST, WebSocket, OpenAPI/JSON Schema, Modbus

Testing & Tools: pytest, Playwright, Git, Docker, GitHub Actions, ruff, mypy

CERTIFICATIONS

[Fundamentals of Deep Learning](#) | *NVIDIA Deep Learning Institute*

Apr. 2025

[Student Success Mentor](#) | *Mentor Collective*

Aug. 2026

AWARDS & HONORS

Selected Student Representative, ABET Accreditation Review | *Washington State University*

Oct. 2025