

Moosa Alam

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EDUCATION

University of Guelph

Bachelor of Computing, Computer Science (Co-op), Specialization in Cybersecurity

Guelph, ON

2025 – 2029

TECHNICAL SKILLS

Languages/Libs: Python (NumPy, pandas, matplotlib), Java, C, JavaScript, SQL, Bash

CS Fundamentals: data structures/algorithms, complexity, debugging, testing (pytest/unittest)

Backend/Data: Flask, REST APIs, WebSockets, PostgreSQL

Quant: probability, statistics, time series, backtesting, risk metrics (PnL, Sharpe, drawdown)

Systems/Dev: Linux, Git, Docker, GitHub Actions, AWS (EC2/S3/IAM), Xcode, profiling/benchmarks

PROJECTS

ApexSim: Event-Driven Trading Backtester | *Python, NumPy, pandas*

Jan 2026 – Feb 2026

- Built an event-driven backtester combining a limit order book, execution assumptions (fees/slippage), and portfolio accounting to evaluate strategies under realistic fills.
- Reduced simulation overhead by optimizing the matching path and event loop, reaching under 2 ms median processing latency under bursty synthetic streams in a reproducible benchmark harness.
- Automated research reports (equity curve, drawdown, exposure, turnover) to compare results across **20+** parameter configurations with consistent assumptions.

QuoterLab: Market Making + Inventory Risk | *Python, NumPy*

Dec 2025 – Jan 2026

- Implemented a two-sided quoting strategy with inventory-aware skew, position limits, and a kill-switch to manage risk during fast price moves.
- Ran Monte Carlo experiments across 100+ simulated market scenarios to measure PnL distribution, drawdowns, and inventory variance across spread/volatility regimes with fixed cost assumptions.
- Built a parameter selection workflow that filters candidates by drawdown and exposure constraints, prioritizing stable behavior over peak backtest returns.

TickVault: Market Data Ingest + Deterministic Replay | *Python, WebSockets, PostgreSQL*

Jan 2026

- Developed a streaming ingestion service that consumes a public crypto exchange WebSocket feed and stores normalized ticks/quotes in PostgreSQL for research-grade querying.
- Sustained **10k+** updates/min while keeping queries responsive by batching writes, indexing hot fields, and validating message formats before persistence.

EXPERIENCE

Software Engineering Intern

Jan 2026 – Present

Vibez Music

Remote

- Built and maintained internal tools and Flask services that automated manual workflows, improving throughput by 40%+ by eliminating repeated human steps and reducing handoffs.
- Improved service reliability by adding request validation, structured logging, and consistent error handling, resulting in faster debugging and fewer regressions.
- Collaborated with iOS engineers in **Xcode** to ship features end-to-end, translating evolving requirements into stable API contracts and clear developer docs.

Freelance Web Developer

June 2024 – Present

Self-Employed

Remote

- Shipped performance-focused client sites, achieving **95–100** Lighthouse by optimizing images, caching, and render-blocking assets.
- Owned requirements to deployment and support, delivering responsive UI and cross-browser compatibility with clear handoff notes.

CERTIFICATIONS

AWS Certified Cloud Practitioner

In Progress

Amazon Web Services

Expected Feb 2026