Arun Arun

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Education

Acadia University — Wolfville, NS
Bachelor of Computer Science (Co-op) – CGPA: 3.98/4.33, Dean's List Scholar — *Expected May 2028*

- **Relevant Coursework:** Distributed Systems, Operating Systems, Computer Architecture I & II, Systems Programming, Database Systems, Computer Networks, Software Engineering, Algorithms & Data Structures

Technical Skills

Programming Languages: Python (Asyncio, FastAPI), Java, C++, C, Go (Foundations), TypeScript, SQL (PostgreSQL, MySQL), Bash
Backend & Systems: Distributed Systems, RESTful APIs, WebSockets, Concurrency & Async I/O, Microservices, Caching
Infrastructure & Cloud: Docker, Kubernetes, Linux (CLI/Debian), Amazon Web Services (AWS), Microsoft Azure, CI/CD, Git
Software Engineering: Object-Oriented Design, Automated Unit Testing (PyTest, JUnit), Profiling, End-to-End System Integration

Software Engineering & Systems Projects

High-Volume Relational Transaction & Storage Engine | *SQL, PostgreSQL, Python, Concurrency* — Winter 2026

- Architected normalized database schemas modeling 500k+ records, maintaining strict ACID transactional consistency under load.
- Engineered performant SQL queries, partition schemes, and disk indexing that cut analytical query latencies from 2.5s to under 1s.
- Constructed automated concurrency benchmarking suites to simulate parallel read/write pressure and resolve deadlocks.
- Profiled query execution plans and database buffer pools to eliminate full-table scans and isolate resource bottlenecks.
- Instrumented health checks and connection pooling logic to optimize resource utilization during burst query operations.

AgriTwinXR High-Throughput Real-Time Streaming Platform | *Python, FastAPI, WebSockets, Docker* — Summer 2026

- Engineered an asynchronous streaming telemetry pipeline to ingest high-frequency sensor events across distributed services.
- Decreased end-to-end data transmission and ingestion latency by 40% via non-blocking event loops and compact serialization.
- Designed resilient connection pooling, heartbeat monitors, and backpressure buffers to ensure zero dropped packets under burst traffic.
- Built interactive operational dashboards and monitoring endpoints to visualize service health metrics and anomalies in real time.

Cloud-Native Container Microservices & CI/CD Pipeline | *TypeScript, Docker, GitHub Actions, AWS* — Winter 2025

- Architected modular backend microservices integrating declarative configuration layers to enable reproducible deployments.
- Built automated multi-stage CI/CD pipelines in GitHub Actions enforcing unit testing, linting, and container security scans.
- Optimized container deployment images using multi-stage builds, reducing total image footprint by 40% across environments.
- Implemented operational health-check endpoints and structured logging utilities to expedite triage of transient failures.

Autonomous AI Agent Runtime & Sandboxed Tooling Harness | *Python, Docker, Linux, Asyncio* — Summer 2026

- Constructed an extensible autonomous reasoning runtime executing complex multi-step tasks with deterministic schema guardrails.
- Maintained sub-200ms latency execution loops by utilizing asynchronous I/O primitives, lightweight serialization, and context pruning.
- Packaged dynamic tool execution into containerized Docker sandboxes to guarantee process isolation and execution safety.
- Authored quantitative evaluation harnesses to benchmark end-to-end operational stability and latency across diverse workflows.

Experience

Nova Data Solutions — Halifax, NS
Software Automation & Systems Assistant — *Oct. 2024 – Jan. 2025*

- Engineered automated Python data processing workflows, eliminating 60% of manual validation effort across structured feeds.
- Authored automated integration test suites and diagnostics to monitor API reliability and diagnose transient ingestion failures.
- Collaborated actively in daily Agile standups, sprint planning, and rigorous peer code reviews to maintain high code standards.
- Authored comprehensive technical documentation, onboarding guides, and troubleshooting runbooks for internal developer tooling.

Labatt Brewery — Halifax, NS
Summer Student Warehouse Logistics Operator — *Summers 2025 & 2026*

- Maintained 100% tracking precision across high-volume distribution schedules through rigorous data logging and verification audits.
- Enforced industrial safety regulations and operational procedures across fast-paced physical environments with a zero-incident record.
- Collaborated with shift supervisors and equipment operators to identify physical bottlenecks and streamline throughput.

Certifications

Certifications: Microsoft Certified: Azure Fundamentals (AZ-900) | AWS Certified: Cloud Practitioner | IBM: AI Fundamentals