

Bereket Demissu Lemma

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EDUCATION

Whitworth University

Spokane, WA

Bachelor of Science: Computer Science | Minor: Applied Mathematics

December 2025

Relevant Coursework: Data Structures & Algorithms, Advanced Algorithms, Operating Systems, Computer Networks, Database Management, Data Science, Deep Learning, Assembly & Architecture, Linear Algebra, Probability & Statistics, Numerical Methods, Differential Equations

Awards: Dean's List, **3rd Place ICPC Pacific Northwest Regional 2025**, VP ACM Student Chapter

Affiliations: ColorStack Fellow, CodePath, NSBE, Datadog x Google SRE Workshop

TECHNICAL SKILLS

Languages: C++, C, Python, Go, SQL, JavaScript, TypeScript

Systems & Performance: Linux, Multithreading, Lock-Free Data Structures, TCP/UDP Sockets, Memory Management, CPU Profiling (perf), Docker, Kubernetes

Data & ML: GCP (BigQuery, Vertex AI, Dataflow, Pub/Sub, Cloud Run), TensorFlow, Scikit-learn, Pandas, NumPy, Redis, PostgreSQL

Cloud & DevOps: AWS (EC2, S3, Lambda), Azure, GitHub Actions CI/CD

PROFESSIONAL EXPERIENCE

OpenAI | Parameter Golf Competitor

Remote | March 2026 – Present

- Training a language model to fit within 16MB under 10 minutes on 8 H100 GPUs, optimized for maximum compression on FineWeb, requiring deep understanding of model architecture, quantization, and training efficiency under extreme constraints
- Engineering custom training loops with gradient accumulation, mixed-precision arithmetic, and memory-efficient data loading to maximize model quality under strict compute and parameter budgets

Celeri.io | Startup Engineer (Founding Team)

Spokane, WA | January 2024 – Present

- Won \$50,000 investment at Sparks Weekend to build communication software for criminal courts, reducing pretrial detention times by connecting stakeholders across counties — [Watch the Pitch](#)

Washington Trust Bank | Security Engineer Intern, IT Infrastructure

Spokane, WA | May 2024 – August 2024

- Automated IT and vulnerability monitoring workflows using PowerShell and Python REST APIs, eliminating 80+ engineering hours/week; integrated pipelines with Azure and GitHub Actions reducing provisioning time by 20%
- Managed Azure VMs and security compliance checks across 3 internal systems; developed documentation for 40+ users across departments, partnering with privacy engineers to build secure, privacy-aware tooling

Hewitt Learning | Full-Stack Software Engineer Intern

Remote | February 2025 – May 2025

- Designed and implemented scalable REST APIs (C#, ASP.NET Core, MySQL) with role-based access control; automated PDF report generation reducing turnaround by 60%, deployed via GitHub Actions CI/CD
- Migrated legacy student records into normalized MySQL schema; built responsive React dashboard with filtering, pagination, and real-time data sync across 3 internal admin tools

West Central Management Project | Volunteer Software Engineer

January 2023 – May 2023

- Built a full-stack database system for a nonprofit migrating 100+ records from Excel to MySQL; RESTful APIs with Node.js/Express, role-based authentication, CRUD operations, and sortable views
- Developed React frontend with dynamic search, filtering, and CSV export; deployed backend on Heroku and frontend on Netlify with automated CI/CD pipeline and environment-based configuration

PROJECTS

Low-Latency Trading Engine Simulator [\[github\]](#) | C++20, Linux, TCP/UDP Sockets, Multithreading, Redis, Docker

- Built a high-performance trading engine processing 1M+ simulated orders/sec with < 5µs p99 latency; lock-free SPSC ring buffer with cache-line-aligned atomics and zero heap allocation on the critical path
- Engineered market-making and momentum strategies; Python pipeline producing p50/p99/p99.9 latency histograms and PnL attribution, containerized with Docker and Redis state persistence

Statistical Arbitrage Backtester [\[github\]](#) | Python, NumPy, Pandas, C++ (pybind11), Polygon.io API

- Quantitative pipeline computing z-scores, rolling correlations, and Hurst exponent; backtesting mean-reversion pairs trading strategy reporting Sharpe ratio, max drawdown, and cumulative PnL curves
- C++ inner loop via pybind11 achieving 25x speedup over pure Python; validated on 5 years of data across 50+ equity pairs with walk-forward optimization

DevScope — Repository Intelligence Platform [\[github\]](#) | Python, GCP (BigQuery, Vertex AI, Cloud Run, Pub/Sub, Dataflow)

- Distributed pipeline ingesting 100K+ events/day via GitHub API into Pub/Sub, Dataflow, and BigQuery; sub-second queries correlating engineering metrics across 600+ repositories
- Vertex AI anomaly detection on Cloud Run achieving 95% precision; automated regression flagging with configurable thresholds and end-to-end processing latency < 2s

Network Intrusion Detection System (NIDS) [\[github\]](#) | Python, Scikit-learn, CICIDS2017 (2.5M rows), Wireshark

- Classification pipeline on 2.5M network flow records; 30+ statistical features and Random Forest achieving 97.47% accuracy with 98.21% F1-score across 7 attack categories including DoS, DDoS, and brute-force
- Applied undersampling to handle severe class imbalance; results visualized in a live Streamlit dashboard for real-time monitoring

LEADERSHIP & PROFESSIONAL DEVELOPMENT

Whitworth University | Teaching Assistant, Database Systems

Spokane, WA | February 2024 – May 2024

- Graded 25+ student assignments weekly with structured rubrics; provided feedback on SQL queries, joins, indexing, and normalization