Ishan Sinha

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Education

University of Washington – Paul G. Allen School of Computer Science **Seattle, WA**

B.S. in Computer Science, Data Science - Graduation Spring 2026

- **Awards:** ICPC Regional Qualifier (top 6 UW), National Merit Finalist, Dean's List x2, National Speech & Debate Highest Distinction
- **Relevant Courses:** Operating Systems, Systems Programming, Hardware/Software Interfaces, Data Structures & Algorithms, Introduction to Algorithms, Distributed Systems, Databases, Machine Learning for Big Data, Deep Learning, Artificial Intelligence, Programming Languages, Matrix Algebra, Probabilities & Statistics

Experience

Axiom Math AI **Palo Alto, CA**

Software Engineer Intern - Machine Learning *September 2025 - December 2025*

- Team of 8 ex-Meta Superintelligence Lab Researchers + Stanford PhD. Raised $60 M to develop large language models trained on mathematical proofs. Our moonshot goal is to formalize all of Math, while simultaneously building the best prover model in the world. Working on ETL pipelines + LEAN proof validator.

Jump Trading **Chicago, IL**

Software Engineer Intern *June 2025 - August 2025*

- Designed and implemented cross-platform, automated dependency management system supporting cloud-scale ETL pipeline backfills. Architected remote access solutions for closed-network nodes, Airflow infrastructure, and grid computing systems.
- Engineered intelligent sharding algorithms reducing backfill processing time by 6+ hours and optimizing compute resource utilization through advanced data partitioning strategies.

Amazon Web Services **Seattle, WA**

Software Development Engineer Intern, AWS X-Ray (CloudWatch) *June 2024 – September 2024*

- Optimized distributed tracing architecture in AWS X-Ray by refactoring core algorithms, eliminating 15+ redundant method calls, and implementing efficient data structures to enhance processing of 1M+ daily traces.
- Developed OpenTelemetry Protocol (OTLP) integration enabling seamless trace export to gRPC and HTTP endpoints, improving system observability across distributed microservices architectures.
- Integrated OpenTelemetry libraries into Brazil build system, implementing secure package management configurations and automated testing pipelines for production deployment.

Technical Projects

Research @ Interactive Data Lab at University of Washington — Python, SQL, C++

- Developing performance benchmarking frameworks for graph databases including Tulip, Neo4j, Cytoscape, and Gephi under guidance of Professor Leilani Battle and PhD Candidate Ameya Patil.

Low-Overhead eBPF Performance Profiler — C++, Python, Linux Kernel

- Architected cross-language profiling solution using OpenTelemetry's eBPF technology within microservices infrastructure, achieving function-level performance visibility with <1% CPU overhead across 12+ services.
- Implemented kernel-level tracing mechanisms and optimized data collection algorithms, reducing mean time to detection (MTTD) of performance bottlenecks by 40% through real-time analysis pipelines.

3D Mesh Generation with AI/ML Optimization — PyTorch, CUDA, Computer Vision

- Developed novel viewpoint-weighting algorithm improving CLIP-loss accuracy for 3D mesh generation models by 50%. Implemented MDL clustering techniques to measure viewpoint complexity, enhancing texture mapping and geometric precision.
- Optimized GPU utilization through parallel processing algorithms and CUDA kernels for real-time mesh rendering.

Technical Skills

Programming Languages: C++, Java, Python, C, Rust, Go, SQL, JavaScript
Systems & Tools: Linux, Git, Docker, Kubernetes, AWS, OpenTelemetry, Airflow, gRPC
Technologies: Machine Learning (PyTorch, TensorFlow), Jupyter Notebooks, REST APIs, Microservices Architecture
Databases & Frameworks: MySQL, Clickhouse DynamoDB, PostgreSQL, MongoDB

Leadership & Activities

Co-President - Algorithmic Trading Club: Led technical workshops on quantitative algorithms and data structures.
Co-President - Lavin Program for Entrepreneurship: Direct UW's selective entrepreneurship program.
Team Member - UW Triathlon Team: Completed 2x Ironman 70.3.