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 5 ex-Meta Superintelligence Lab Researchers + Stanford PhD. Raised $60 M to develop large language models trained on mathematical proofs to apply that reasoning to quantitative finance and risk analysis. 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.