Aiden Ma

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Education

University of Waterloo Sep 2024 – Dec 2028
Bachelor of Honours Computer Science | GPA: 3.99/4.00; Major GPA: 4.00/4.00 *Waterloo, ON*
Relevant Coursework (Enriched-Level): Algorithms, Compilers, Data Structures, OOP, Statistics

Technical Skills

Languages: C++, Python, Java, Kotlin, C#, JavaScript, SQL, Bash
Frameworks/Libraries: LLVM/MLIR, PyTorch, TensorFlow, OpenCV, ROS2, Android, GoogleTest
Tools/Platforms: Linux, Git, Docker, AWS, PostgreSQL, Jenkins, Gradle

Experience

Square (Block) May 2026 – Aug 2026
Software Engineer Intern *Remote*
- Shipped Java/Kotlin Android POS inventory-adjustment flows across catalog, inventory, and checkout modules, building UI/state management, integrating backend APIs, and handling multi-location stock conflicts; resolved deal-blocking requirements for 2 merchants representing $94M in annual GPV.
- Built location-aware Android POS tax logic, integrating merchant-location state with tax-rule APIs to dynamically apply jurisdiction-specific checkout taxes; highly requested by 5 merchants representing $190M in annual GPV.
- Added production event instrumentation for a cross-team Android POS workflow, unblocking A/B test rollout and avoiding an estimated 3-week launch delay.

Huawei Canada IC Lab Jan 2026 – Apr 2026
Deep Learning Compiler Engineer Intern *Markham, ON*
- Designed a hash-based lookup system for 4,000+ compiler operators, reducing resolution latency from >1s to <20ms.
- Developed a custom expression grammar and C++ parser for fusion operators, reducing implementation time by 5x for complex tensor expressions.
- Optimized tensor shape propagation speed by 25x in Python/C++ using profiler-guided bottleneck analysis.
- Reduced 4,000-file operator library load time from 1s to 400ms through data-structure and I/O optimizations.

Ford Motor Company R&D Center May 2025 – Aug 2025
Software Development Engineer Intern *Waterloo, ON*
- Shipped Java/Kotlin Android infotainment updates across CarPlay, Android Auto, and Bluetooth, including Valet Mode restrictions, app syncing, and how actively played media is displayed.
- Identified a release-blocking P0 infotainment defect and multiple P1/P2 issues across CarPlay, Android Auto, and Bluetooth; documented logs and reproduction steps for triage.
- Built Python automation for defect triage, reducing manual investigation effort by over 50%.
- Raised Android unit test coverage by 15% with JUnit, Mockito, and Robolectric.

Watonomous Design Team, University of Waterloo Jan 2025 – Present
Computer Vision Software Lead & Director of Humanoid Robotics *Waterloo, ON*
- Built >30 FPS object-detection pipelines in PyTorch, OpenCV, and NumPy, enabling real-time humanoid perception.
- Built and integrated C++/ROS2 control software for 20+ actuators and 10+ sensors.
- Led 50+ students across computer vision, controls, and hardware teams, setting technical milestones and coordinating integration across perception and motion systems.

Waterloo Reality Labs, University of Waterloo Sep 2024 – Present
Software Lead & Team Lead *Waterloo, ON*
- Integrated LLM and TTS APIs into Unity/C# VR apps, delivering contextual guidance in interactive virtual environments.
- Led development of a standalone low-cost VR headset prototype, coordinating software, mechanical, and product decisions.
- Mentored 10+ students across software and mechanical subteams, developing 3 contributors into subteam leads.

Awards

- 2x AIME; Top 1% in Euclid, COMC, and CTMC math contests; Top 5 in Ontario FTC Robotics; YCDSB Top Scholar.

Projects

Microtik | *C++20, GoogleTest, Google Benchmark, Python*
- Built a C++20 limit order book and event-driven backtester with price-time priority matching, FIFO queues, CSV replay, synthetic workloads, PnL/drawdown metrics, Python visualizations, and GoogleTest/Benchmark coverage; measured 741K orders/sec with 0.5 µs p50 and 1.6 µs p99 latency.

Blueprint Processor | *Python, TensorFlow, PyTorch, OpenCV, SQLite* Jan 2026 – Mar 2026
- Built a Python CV pipeline that parsed CAD blueprints, identified wall segments, extracted dimensions, and automated material estimation in 3-5s per page with 90%+ segment-level wall-identification accuracy on annotated floor plans.