

Austin Jiang

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Dear hiring manager,

I am a Computer Science student at the University of Waterloo applying for the Software Engineering Intern role. I am particularly passionate about performance, runtime systems, and machine learning infrastructure.

I am currently an undergraduate research assistant in the Multicore Lab at the UWaterloo, where I work on extending Verlib (PPoPP'24) with **lock-free GPU data structures** to support linearizable range queries at **10M-key scale**. My work focuses on **correctness and performance** under concurrency, including implementing **CPU baselines for controlled benchmarking** and debugging low-level GPU systems code.

Previously at Wolfram Research, I worked on a parallel cellular automata runtime, focusing on **execution design, load balancing, and benchmarking**. I built a parallel engine handling **10^{10}** cells across **8 CPU cores** and implemented sparse frontier updates and dense scans, achieving up to a **127% speedup** on low-activity states.

My competitive programming background, including being **two-time Canadian Computing Olympiad Silver Medalist (national top 10)** and **USACO Platinum**, reflects my solid understanding of data structures, algorithms, and systems fundamentals.

I am particularly interested in internships where correctness, reliability, and low-level understanding matter, and I would love the opportunity to contribute to your team.

Sincerely,
Austin Jiang