Juncheng Zhu

437-601-5286 | ezhu0508@gmail.com
https://www.linkedin.com/in/juncheng-z/ | github.com/j494zhu

EDUCATION

University of Waterloo · Waterloo, ON
Candidate for Honours Computer Science, Co-op · *Sept. 2025 – Present*
- **Cumulative GPA: 91.3%** (Term 1A)
- **Scholarships:** René Descartes National Scholarship, President's Scholarship of Distinction.
- **Relevant Coursework:** Designing Functional Programs (**90%**), Calculus I (**92%**), Public Speaking (**92%**), Algebra (In Progress, Expected 95+).

HONOURS & AWARDS

Mathematics Competitions | *International & National*
- **CMO Qualifier:** Canadian Mathematical Olympiad (Top tier national competition).
- **Euclid Contest:** Group 2 Honour Roll (Score: **95/100**) - Top 1% globally.
- **CSMC:** Group 2 Honour Roll (Score: **59/60**) - Near perfect score.
- **Fermat Contest:** Group 1 (Full Marks) - National Champion.
- **AMC 12 & AIME:** AMC 12 Distinction (**132/150**), AIME Distinction (**11/15**).

Computing Competitions | *Algorithms*
- **USACO Gold Division:** Advanced algorithmic problem-solving skills.
- **CCC (Canadian Computing Competition):** Group 2 Honour Roll (Score: **66/75**).

PROJECTS

PyFinance Tracker | *Python, Flask, SQLite, NumPy, Matplotlib* · Oct. 2025 – Present
- Developed a full-stack financial tracking web application using **Flask** and **SQLite**.
- Engineered a thread-safe visualization module using **Matplotlib (Agg)** and **NumPy** to generate high-resolution (500 DPI) histograms for spending analysis.
- Implemented robust **CRUD** operations with defensive programming, ensuring data integrity through strict server-side validation and error handling.
- Designed a responsive UI with Jinja2 templates, featuring ghost buttons for critical actions.

Fireworks Vs Ango (Web Game) | *JavaScript (ES6+), HTML5 Canvas, Git, GitHub Pages* · Dec. 2025
- Developed a lightweight browser-based action game using Vanilla JavaScript and HTML5 Canvas, accessible via GitHub Pages.
- Engineered a high-performance particle system by migrating rendering logic from DOM manipulation to Canvas API, maintaining 60 FPS with 100+ concurrent entities.
- Implemented Object-Oriented game entities and physics simulation (gravity, friction) using ES6 Classes and vector mathematics.
- Built a custom game loop using `requestAnimationFrame` to handle real-time updates and Euclidean distance-based collision detection.

EXPERIENCE

Math Club President · Richmond Hill, ON
Bayview Secondary School · *Sept. 2024 – June 2025*
- Led the school's mathematics community and organized weekly training sessions for club members.
- Served as **Team Leader** for the Harvard-MIT Mathematics Tournament (HMMT) in 2023 and 2024.
- Achieved **13th Place** in Team Guts Round and **37th Place** individually in Theme Round at HMMT 2024.
- Mentored members in preparation for contest-level problem solving (Euclid, CSMC).

TECHNICAL SKILLS

Languages: C++ (Proficient: Memory Management, STL, Pointers), Python (Data Analysis), SQL, Racket, Java
Frameworks/Libraries: Flask, NumPy, Pandas, Matplotlib, Jinja2
Tools: Git, GitHub, VS Code, Linux/Bash, LaTeX
Spoken Languages: English (Professional), Mandarin (Native)