Ethan Zhao

Top 1% GPA | Founder ML Cancer Screening | RBC + AI Internships | Quantum Portfolio Optimizer | Shipped 9+ Products

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EDUCATION

Western University   **London, Ontario**
B.Eng. Mechatronics, HBA Business Dual   Sept. 2023 – May 2027
- 3.98/4.0 GPA (Top 1%). Recipient of the Western Scholarship of Distinction ($2,500).
- Elected First Year Representative of Engineering and appointed VP Finance of a $150k+ budget.
- 1st place at Western Automotive Innovative Challenge: built the most efficient and effective privacy preserving AI detector.
- 2nd of ~90 teams at Western Engineering Competition: innovative egg-drop design—achieved highest accuracy using least materials and presented technical rationale to a panel of judges.

WORK EXPERIENCE

Royal Bank of Canada   **Toronto, ON**
Technical Systems Analyst – Mainframe Capacity & Automation   May 2025 – Present
- Built real-time dashboards (Cognos, Power BI) integrating operational and financial datasets across mainframe workloads.
- Automated reporting pipelines (Python, SQL), **eliminating 24 hours** of manual work quarterly.
- Developed a **2000+ line VBA system** integrating Excel + Outlook, streamlining ops and saving 5+ hrs/week team wide.

Goodkind Software Corporation   **Toronto, ON**
Software Engineering Intern – AI Systems   May 2024 – Aug. 2024
- Created a customizable topic categorization chatbot system (Node.js, LangChain, RAG) in **<2 months**, unlocking customization and analytics features, directly acquiring **3 new clients**.
- Led critical infrastructure recovery, designing fault-mitigation workflows under real-time outage pressure outside work hours.
- Analyzed historical chatbot usage to prepare product insights, helping secure a new client.

Foursight Screenings (foursight.ethanzhao.me)   **Toronto, ON**
Co-Founder & Lead Software Engineer   May 2021 – Sept. 2023
- Won **$15K Grand Prize + EU Science Award** for applied ML innovations in cancer prediction.
- Trained ML model (**95% accuracy**) in predicting cancer from micro-RNA, applying statistical learning and rigorous validation.
- Built secure web-based interfaces for model access and visualization, enabling data sharing with researchers and clinicians.

aPrepTutors (apreptutors.ca)   **Toronto, ON**
Co-Founder   May 2021 – Sept. 2023
- Launched a live tutoring marketplace with automated onboarding, matching, and booking across 8+ tutors and 50+ students.
- Reached **profitability in <2 months** through 1:1 tutoring revenue share model; scaled product to sustained monthly usage.

PROJECT EXPERIENCE

Portfolio Optimization using Quantum Annealing | *Qiskit, Python, QUBOs*   **Nov. 2023 – May 2025**
- Developed **quadratic-time** quantum annealing optimizer for risk-constrained portfolios, backtested at **12.6% annual return**.
- Formulated QUBOs from covariance, return targets, and qualitative analysis using live market data.
- Engineered equity features from fundamentals and prices, improving accuracy and adding analyst insights in algorithm.

Stationbook | *React Native, Node.js, Docker, Ngnix, SQL*   **July 2024 - Present**
- Commissioned by faculty to build point-tracking + event app for **4000+ engineering students**.
- Architected burst-resistant event app backend (JWT SSO, queues, containerization), load-tested to **900+ concurrent users** for university-wide rollout (Fall 2025).

LEADERSHIP EXPERIENCE

Western Developer Society – *VP Development*   **Sept. 2023 – Present**
- Led 9 teams (56 devs) delivering apps for professors, city councilors, and startups.
- Deployed and delivered **80% of projects** in 8 months, across automation, data analysis, and robotics.
- Enforced CI/CD pipelines and agile sprints to ensure production-ready code delivery under tight timelines.

SKILLS AND INTERESTS

Languages: C++, Python, SQL, Java, Rust, Javascript, R
Framework & Libraries: React, Node.js, TensorFlow, PyTorch, Pandas, NumPy, SciPy, Matplotlib
Tools & Platforms: Git, Docker, AWS, GCP, Power BI, Cognos, Excel (Adv), z/OS
Concepts: Machine Learning, Optimization, Statistical Modeling, DevOps, Quantum Computing