

# SHAWN WEI

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## EDUCATION

### University of Waterloo

Waterloo, ON

Bachelor of Honours Computer Science, Co-op

Sept 2025 – Apr 2030

- Awarded the **Richard and Elizabeth Madter Entrance Scholarship** as the **sole recipient** from the incoming Faculty of Mathematics cohort for 2025.
- Recipient of the **TD Achieve the Dream Scholarship**, recognizing top-tier academic standing and demonstrated community leadership.

## EXPERIENCE & LEADERSHIP

### Milliken Computer Studies

Markham, ON

Co-President & Lead Tutor

Sept 2022 – Mar 2025

- Directed an executive team to deliver technical workshops for **30+ members**, resulting in **70%** of students achieving "Distinction" status in the Canadian Computing Competition (CCC).
- Developed a technical curriculum focusing on **Graph Theory (BFS/DFS)**, **Dynamic Programming**, and **Greedy Algorithms**, catering to all levels of programmers.
- Designed and open-sourced a repository of competitive programming solutions and modular logic workshops, standardizing the technical onboarding process for 30+ new developers.

### FRC Team 9569 Silver Knights

Markham, ON

Programming Lead

Jan 2024 – Apr 2024

- Orchestrated the software development lifecycle for an **8-person programming team**, enforcing **Git** branching strategies and Agile methodologies to ensure rapid code iteration during a 6-week build season.
- Architected a modular Java codebase utilizing the **WPILib** framework, reducing technical debt and improving code maintainability by 25% through strict Object-Oriented design principles.
- Strategized software-hardware integration that secured the team's first-ever **Rookie All-Star Award**, achieving a top-40% provincial ranking (**53/138**) in the debut season.

## SKILLS

**Languages:** Python, Java, C, C++, JavaScript, HTML/CSS, SQL, Bash

**Frameworks:** React.js, Next.js, TailwindCSS, Node.js, FastAPI, Django

**Tools & Platforms:** Linux/Unix, Docker, Azure, Git, PostgreSQL, CI/CD, JIRA/Agile, MS Office

## PROJECTS

### InTime | Winner - Socratica x Claude Hackathon | React, CanvasAPI

Nov 2025

- Secured **1st Place** out of 20+ teams by delivering a high-performance productivity MVP within a strict **24-hour** constraint, focusing on a physics-based monetization logic.
- Built a timer web interface using the **Canvas API** and complex React state management, handling real-time animations and user-centric data flows.

### Real-Time Flight Telemetry & Analytics Pipeline | Python, SQL, Flask

Sept 2025

- Engineered a high-throughput data ingestion pipeline to process real-time ADS-B signals, ensuring **data integrity** while transforming unstructured JSON telemetry into relational schemas.
- Optimized query performance and reduced retrieval latency by **40%** for 50+ concurrent streams by implementing efficient **indexing strategies** and local caching.
- Applied **statistical analysis** using NumPy to identify telemetry trends, providing actionable insights into aircraft performance metrics similar to financial time-series data.

### Autonomous Robotics Navigation System | Java, OpenCV, PID Control

Apr 2024

- Architected fault-tolerant autonomous logic achieving **95% execution reliability** via sensor fusion (Vision + IMU) and custom state machines.
- Implemented **PID control loops** to reduce positional drift by **20%**, utilizing **OpenCV** to detect AprilTags for real-time target acquisition and path planning.