

# Sean Zhang

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## TECHNICAL SKILLS

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**Languages:** C++, Python, C#, Java, TypeScript/JavaScript, SQL

**Frameworks & Libraries:** ASP.NET Core, EF Core, React, Redux Toolkit/RTK Query, NextAuth (Azure AD/OIDC), MUI, SIP Sorcery, FastAPI, gRPC, Protobuf

**Data & Infrastructure:** Kafka, TimescaleDB (Postgres), SQL Server, Redis

**Developer Tools:** Git, Docker, Microsoft Graph, Visual Studio, VS Code, Postman, Jira, Confluence

**Cloud:** AWS, Azure

## EXPERIENCE

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### Software Engineer

Jun. 2025 – Aug. 2025

*Habtech Communications*

*Mississauga, ON*

- Designed and built an end-to-end **Timesheet Management Platform** with enterprise **SSO** (Azure AD/NextAuth) and automatic provisioning, eliminating manual account creation. Deployed to **AWS (QA)** and **Azure (Prod)**. Reduced payroll processing time by **80%** and cut costs by **\$2000+/yr**.
- Enabled **75+ employees** to submit timesheets via a PWA app with SMS reminders and data validation, replacing Excel + email workflows. Reduced entry time by **90%** and minimized submission errors by **95%**.
- Delivered an **admin dashboard** for managing timesheets, employees, and integrated **Microsoft Graph** to dynamically manage **Azure AD groups**.
- Developed a production **REST API backend** (ASP.NET Core/SQL Server) for **1,000+ weekly entries**, applying a Controller–Service architecture with dependency injection for decoupling and testability.
- Integrated directly with **SIP devices** using the **SIP protocol** and a vendor-provided API to enable reliable remote access.
- Built a custom service layer with dedicated **REST endpoints**, leveraging **SIP Sorcery** to abstract device complexity and provide a reusable interface.

### Aquatics Deck Supervisor

Dec. 2023 – Jun. 2025

*City of Mississauga*

*Mississauga, ON*

- Promoted** from Lifeguard/Instructor; acted as a **liaison** between patrons, aquatic staff, and management, bridging communication across all stakeholders.
- Oversaw aquatic staff and **applied** my own experience as a Lifeguard/Instructor to **mentor** and **guide** teammates, **providing feedback**, modeling best practices, and elevating lesson quality and participant satisfaction.
- Coordinated **schedules, staff rotations, and deck supervision** to maintain safe, efficient, and well-staffed public swim operations.
- Managed **emergencies** by **delegating** responsibilities, coordinating responses, and ensuring compliance with safety procedures.

## PROJECTS

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**TradeStream** | C++, Python, TypeScript, FastAPI, Kafka, TimescaleDB (Postgres), React, gRPC, Docker

- Engineered a **real-time market data pipeline** ingesting normalized tick/quote/bar data via **Kafka**, writing to **TimescaleDB** and feeding a C++ analytics engine over **gRPC**.
- Built a low-latency **C++ microservice** for analytics (VWAP, spreads, volatility) on streaming data, enabling sub-second **alerts** to Slack/SMS/email.
- Developed an **RBAC-secured FastAPI backend** orchestrating alerts and queries, integrating with **React dashboards** for watchlists and real-time views.

## EDUCATION

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### University of Waterloo

Waterloo, ON

*Bachelor of Computer Science*

*Expected Graduation, 2030*

**Schulich Leader Scholar** (valued at **\$100,000**, selected from **1,500+** nominees across **300,000+** candidates nationwide), **Varsity Swimmer**