

Xiemin (Simon) Wen

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EDUCATION

University of Waterloo

Bachelor of Computer Science, GPA: 3.6/4.0

Waterloo, Ontario

Sep 2023 - Jun 2028

PROFESSIONAL EXPERIENCE

Software Engineer Intern - Propel Holdings

Sep 2025 - Dec 2025

- Designed and implemented SQL-based validation frameworks and backend rule-enforcement logic across 16+ live production services, improving financial data integrity and increasing reporting accuracy to over 95%.
- Optimized reporting workflows processing **10k+ financial records** per cycle by introducing composite indexes, eliminating full table scans, and reducing verification turnaround time by **30-40%**.
- Refactored backend validation pipelines to remove redundant database calls and improve reliability under concurrent execution with **200+ parallel validation tasks**.
- Refined slow queries with EXPLAIN ANALYZE and indexing to reduce query cost and improve throughput.

Software Engineer Intern - Microsoft & University of Waterloo

May 2024 - Aug 2024

- Built and deployed Azure-based backend services for an investment insights application, developing production API logic to support personalized recommendation workflows across **3 service components**.
- Designed and optimized Azure SQL schemas, queries, and indexing strategies for portfolio and recommendation datasets with **5k+ records**, improving query latency by **20-30%** for frequently accessed retrieval paths.
- Implemented backend logic to handle **10+ concurrent requests** and deployment-time updates, reducing redundant processing and improving service stability in production workflows.
- Integrated ML outputs into backend endpoints, improving personalized insight delivery and maintainability.

PROJECTS

Restaurant Order Routing and Kitchen Execution System

May 2025 - Aug 2025

- Built a backend-driven restaurant order routing system to coordinate orders across **3+ kitchen stations**, supporting **20+ concurrent order updates**, real-time status tracking, and multi-step preparation workflows.
- Designed scheduling logic to prioritize dishes by preparation time, order urgency, and station availability, reducing routing bottlenecks and improving simulated kitchen throughput by **15-20%** during peak order periods.
- Implemented asynchronous order state transitions with idempotent handlers and retry logic, preventing duplicate updates and maintaining consistent order status across **2 operational views** under concurrent request scenarios.
- Developed REST APIs and relational data models for order creation, routing, cancellation, and completion, supporting **1k+ simulated orders** and reliable coordination between front-of-house and kitchen operations.

AI-Powered Queue and Appointment Optimization System

Sep 2024 - Dec 2024

- Built a full-stack appointment scheduling platform using **React, Node.js, Express, and PostgreSQL**, supporting real-time queue tracking, provider scheduling, and role-based dashboards.
- Developed a **wait-time prediction and scheduling module** using historical appointment and provider data, improving queue estimates and reducing scheduling conflicts.
- Designed backend APIs and database workflows to process **1k+ appointment and queue records**, enabling dynamic rescheduling, time-slot prioritization, and low-latency retrieval of active queue states.
- Integrated prediction outputs directly into scheduling and queue-routing logic, allowing the system to recommend more efficient appointment slots and helping reduce average patient wait times by **15-20%** in test simulations.

TECHNICAL SKILLS

Programming Languages: Java, Python, C++, TypeScript, SQL

Backend/Cloud: Node.js, Spring Boot, REST APIs, GraphQL, Redis, AWS, Azure, Docker, GitHub Actions

Systems: Concurrency, Event-Driven Architecture, SQL Optimization, CI/CD