

BENSON LIN

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EDUCATION

Worcester Polytechnic Institute

B.S./M.S. in Computer Science (GPA: 3.56 / 4.0)

May 2026

Worcester, MA

SKILLS

Languages : Java, Python, TypeScript, SQL, C#, C

Backend : Spring Boot, FastAPI, REST APIs, Spring Data JPA, Hibernate, SQLAlchemy, WebSockets

Databases & Infrastructure : PostgreSQL, Docker, Flyway, Maven, GitHub Actions, AWS (EC2, RDS)

Testing & Frontend : JUnit 5, Testcontainers, Vitest, React, Next.js, Tailwind CSS, Git

EXPERIENCE

Microsoft-Sponsored Telemetry & Anomaly Detection Project

Aug. 2025 – Mar. 2026

Software Engineer

Remote

- Built end-to-end telemetry pipeline in Python capturing real-time UI events via Win32/pywinauto, converting raw signals into structured semantic workflow graphs.
- Trained Hidden Markov Models (Baum-Welch EM) on UI sequences and applied Viterbi decoding to flag anomalous workflow patterns indicative of failure before support escalation.
- Implemented heuristic detection system for dead clicks, rage clicks, cyclical navigation, and keyboard mashing validated against a human-labeled dataset using precision, recall, and F1 evaluation.

Urban Livability Analysis Venice (SerendPT Sponsored)

Mar. 2025 – Jun. 2025

Software Developer

Venice, Italy

- Developed data processing workflows in Python and Node.js to clean and analyze **4,000+ infrastructure data points** across **126 historic city islands**.
- Conducted geospatial analysis with ArcGIS to quantify accessibility and congestion patterns across **100+ regions**.

PROJECTS

DropForge | dropforge-roan.vercel.app

Jun. 2026 – Present

- Built a limited-inventory reservation platform in Java using Spring Boot and Next.js, supporting timed reservations, checkout, cancellation, and expiration.
- Implemented transactional reservation and checkout workflows using Spring Data JPA and PostgreSQL constraints to keep inventory consistent under concurrent requests.
- Developed 70+ backend tests with JUnit 5 and Testcontainers, validating REST endpoints, database interactions, reservation state transitions, and inventory restoration.

Vigil | getvigilapp.vercel.app

May 2026 – Present

- Built real-time telemetry ingestion pipeline (FastAPI WebSockets + SQLAlchemy async) sustaining **99 events/sec** with **331ms P99 latency** and zero failed batches across **3,000 confirmed PostgreSQL writes**.
- Engineered stateful anomaly detection engine achieving **100% precision, 77% recall, 87% F1** across 35 labeled synthetic telemetry events with **5.8s mean detection latency** and 0% false positive rate.

Orbit | orbit-wpi.vercel.app

Apr. 2026 – Present

- Built ETL pipeline scraping RateMyProfessors and WPI course catalog, normalizing **4,000+ course sections** and **589 faculty records** into a relational PostgreSQL schema.
- Designed NLP pipeline using LLM API to extract structured teaching quality signals from **8,000+ student reviews**, cached as queryable per-professor attributes.