

Lawrence Arryl Lopez

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EDUCATION

Ontario Tech University

B.Eng. in Software Engineering

Oshawa, Ontario

Expected May 2027

- Relevant coursework: Operating Systems, Computer Networks, Data Management Systems, Software Quality and Project Management

TECHNICAL SKILLS

Languages: Go, Rust, C, Python, Java, TypeScript, SQL

Frameworks: Gin, FastAPI, Flask, Spring Boot, Next.js, React, XGBoost

Infrastructure: AWS, GCP, Docker, Kubernetes, GitHub Actions, CI/CD Pipelines

Databases & Tools: PostgreSQL, Redis, Apache Kafka, Git, Linux

PROJECTS

ankyloGo – Abuse-Aware Rate Limiting Library

2026

Go, Redis, Lua, Apache Kafka, Docker

- Engineered a **Gin** middleware library composing **sliding-window** and **token-bucket** rate limiting over pluggable **Redis** and in-memory backends.
- Eliminated race conditions in distributed deployments by implementing Redis rate limiting as **atomic Lua scripts** with fail-open resilience.
- Integrated a **Kafka**-backed goroutine risk engine scoring per-IP abuse events and proportionally tightening limits with linear or half-life decay.
- Stress-tested correctness under **135K+ req/sec** with **sub-5ms p99** latency on a 14-core system under concurrent load.

Sharpeye.io – NBA Player Performance Prediction Platform

2025

FastAPI, XGBoost, Redis, PostgreSQL, GCP, Next.js, Docker

- Trained an **XGBoost** regression model on **110K+** game logs with **15+ rolling features** (pace, usage rate, positional defense), achieving **4.70 MAE** across **3-fold cross-validation**.
- Built a **Monte Carlo** simulation engine (**10K iterations**) generating probability distributions across multiple point lines.
- Architected an async **FastAPI** backend with **PostgreSQL** and automated daily **ETL cron jobs** via **GitHub Actions** to ingest, transform, and maintain a **60-day** rolling feature window.
- Deployed on **Google Cloud Run** and **Vercel** with **Redis**-backed caching, serving predictions through a **React/TypeScript** dashboard.

OPEN SOURCE

vortex (370+ stars) – Eliminated per-rotation fork/exec overhead by replacing shell date with **Rust** time crate 2026

EXPERIENCE

STEM Camp Counsellor

Jun 2024 – Aug 2025

STEM Camp

Oshawa, Ontario

- Taught computational thinking and introductory programming (Scratch, MakeCode) to groups of 20+ students.
- Mentored students through hands-on robotics projects, adapting curriculum to varying skill levels.

After-School Program Activity Leader

Sep 2024 – Present

BGC Durham

Oshawa, Ontario

- Facilitated structured problem-solving and team-based activities for groups of 20–30 students each session.
- Coordinated scheduling and daily programming alongside a team of 5+ staff members.