

RAHUL RAKESH

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EDUCATION

University of Western Ontario

B.Sc. Honours Specialization in Computer Science (CO-OP)

2023–2027 (Expected)

London, Ontario

- Relevant Coursework: Data Structures & Algorithms, Databases, Software Engineering, Machine Learning

TECHNICAL SKILLS

Languages: Python, Java, C/C++, JavaScript, TypeScript, SQL, Bash

Web & Backend: React, Node.js, Express.js, Django, REST APIs, Socket.IO

Databases & Caching: PostgreSQL, MongoDB, SQLite, Redis, Azure SQL

Cloud & DevOps: AWS (EC2, S3, Lambda), Azure Functions, Docker, Git, GitHub Actions

ML / AI: PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, Gymnasium (RL), OpenAI API, Gemini AI

PROJECTS

Fake Out – Real-Time Multiplayer Game

- Built a real-time multiplayer game achieving **sub-100ms latency** and **99.5% uptime** using **React, TypeScript, Node.js, and Socket.IO**.
- Designed **authoritative server-side game state** with room-based events and heartbeat monitoring, supporting **10 concurrent players** without desynchronization.
- Deployed containerized services via **Docker** on **Fly.io** with CI/CD pipelines, handling **1,000+ game sessions**.

NeuroScan – RL-Driven HPC Workload Optimizer

- Improved HPC scheduling efficiency by **25%** and reduced job wait time by **35%** using deep reinforcement learning agents built with **PyTorch** and **Gymnasium**.
- Executed **10,000+** distributed simulations on **AWS EC2** to evaluate policy performance at scale.
- Optimized **multi-objective reward functions** balancing completion time and resource utilization, analyzed via TensorBoard.

Schedula – Serverless Booking Backend

- Developed a serverless booking API with **sub-200ms response times** using **Azure Functions, Azure SQL**, and JWT-based authentication.
- Prevented race conditions and double bookings through **transaction-safe scheduling**, SQL isolation levels, and idempotent requests.
- Implemented secure configuration, monitoring, and alerting using **Azure Key Vault**, Application Insights, and Logic Apps.

VitaLink (TerraHacks 2025) – AI Healthcare Platform

- Reduced patient intake time by **30%** by building a healthcare platform using **React Native** and **Django REST Framework** with intelligent form pre-filling.
- Integrated **Gemini AI**-powered triage achieving **85% accuracy** in preliminary health assessments and symptom analysis.
- Developed a **Twilio**-powered emergency voice assistant with NLP and implemented HIPAA-compliant encryption for secure patient data storage.

WORK / LEADERSHIP EXPERIENCE

Freelance Web Developer

Self-Employed

Sept 2024 – Present

Remote

- Delivered production-grade full-stack applications for **5+ clients** using **React, Node.js, and PostgreSQL**, increasing organic traffic by **60%**.
- Improved website performance with **50% faster load times** and **40% higher engagement** through code optimization, lazy loading, and SEO best practices.
- Led projects end-to-end, including requirements gathering, system design, deployment to **AWS** and **Vercel**.

Ultimate Frisbee Captain / Coach

School / Merciful Redeemer Parish

June 2022 – Aug 2025

Mississauga, Ontario

- Led and coached a competitive team of **15+ players** to **2 tournament championships** by coordinating training, strategy, and logistics.
- Achieved **90% year-over-year player retention** by developing structured training programs emphasizing skill development and teamwork.
- Cultivated a positive team culture through mentorship, leadership development, and community outreach initiatives.