

# Rahul Rakesh

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## EDUCATION

### University of Western Ontario

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

2023–2027 (Expected)

## TECHNICAL SKILLS

**Languages:** Python, C/C++, Java, JavaScript, SQL, HTML/CSS, Assembly

**Databases:** PostgreSQL, MongoDB, SQLite

**ML/AI Frameworks:** PyTorch, TensorFlow, Pandas, Gymnasium (RL), SciKit Learn, Matplotlib, LLMs

**Tools & Platforms:** React, Node.js, Django, Docker, Git, AWS

**Methodologies:** Agile/Scrum, Testing & Debugging

**Soft Skills:** Analytical thinking, problem-solving, adaptability, collaboration, and teamwork

## PROJECTS

### Fake Out – Real-Time Multiplayer Game

- Developed Fake Out, a real-time multiplayer party game, using React, TypeScript, Node.js, and Socket.IO for a seamless social deduction experience.
- Engineered a low-latency game lobby using Socket.IO to handle real-time state synchronization for up to 10 concurrent players.
- Containerized the full-stack application with Docker and deployed it to Fly.io.

### NeuroScan – RL-Driven HPC Workload Optimizer

- Designed deep RL agents using PyTorch that improved job scheduling efficiency by 25% compared to standard First-Come-First-Serve algorithms.
- Deployed training pipelines on AWS EC2 instances, processing over 10,000 simulated job cycles to evaluate model performance.
- Architected a modular research codebase with reusable agent, environment, and evaluation components to support future AI/HPC optimization research.

### VitaLink (TerraHacks 2025) – AI-Powered Healthcare Network

- Created a healthcare platform using React Native frontend and Django REST backend, designed an algorithm projected to reduce patient intake time by 30% by pre-calculating urgency scores.
- Integrated Gemini AI for triage, assigning urgency scores and routing patients via PostgreSQL/MongoDB.
- Built emergency voice assistant with speech recognition, TTS, and Twilio, enabling hands-free EMS dispatch.

### WebWall – Cross-Browser Productivity Extension

- Developed a Manifest V3 extension for Chrome, Edge, and Firefox in JavaScript, blocking distractions like Instagram Reels and YouTube Shorts.
- Improved user focus with customizable schedules and focus sessions using Chrome Storage APIs and service workers.
- Built responsive UI with HTML/CSS/JS and ensured cross-browser sync + local-first storage for privacy.

## WORK / LEADERSHIP EXPERIENCE

### Ultimate Frisbee Captain / Coach

June 2022 – August 2025

Mississauga, Ontario

- Led a competitive team by organizing practices, developing strategies, and coordinating with players and winning 2 trophies.
- Ensured player safety and adherence to fair play rules during all practices and games.
- Coached team members on fundamental skills, advanced techniques, and in-game tactics for overall better performance.

### Camp Leader

Merciful Redeemer Parish

July 2023 – August 2023

Mississauga, Ontario

- Organized and led educational workshops for 50+ campers on conservation and sustainable living.
- Ensured smooth operations by supervising staff, maintaining facilities, and resolving behavioral issues effectively.
- Fostered a supportive environment by mentoring team members and encouraging collaboration.