

# Kabir Verma

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## Education

**University of Waterloo** | *Bachelor of Computer Science, Minor in Biology, Combinatorics* Sep 2022 - Apr 2027  
President's Scholarship of Distinction

**Relevant Courses:** Objected-Oriented Programming (C++), Sequential Programming (advanced versions)

## Skills

**Languages:** Python, Go, Java/TypeScript, PHP, Java, C/C++, C#, Swift, Lisp (Scheme), SQL, Bash, R

**Technologies:** React, Express, Flask, Pandas, GraphQL, FastAPI, MongoDB, Docker, Azure, Jira, Google Cloud

## Experience

**University of Toronto & National Research Council** | *Software Engineer* Toronto, CA Sep – Dec 2025

- Implemented **caching** and **circular buffer** replay memory reducing evaluation time by **10x** & memory usage by **4x**, enabling local **Double Deep Q-Network (DDQN)** training across **10000+** trials on materials science datasets
- Architected **modular RL framework** from **5000+** lines of monolithic code into **13+** **specialized modules** for EIS (electrochemical impedance spectroscopy) circuit discovery, improving extensibility and maintainability
- Built **checkpointing system** preserving randomness and trial state for reproducible experiments and recovery
- Created evaluation suite with **batch processing**, circuit visualization **GIFs**, and automated conda setup

**Geotab** | *Data Science Intern* Oakville, CA Jan – Apr 2025

- Wrote recursive **BigQuery SQL** pipeline to simplify hierarchical relations for fleet management **insights**
- Refined **Airflow** pipeline timing thresholds and branching logic to remove false alarms and improve reliability
- Ran **NumPy** analysis, finding anomalies in **SQL** pipeline data, applied QA to ensure data processing accuracy
- Enhanced global system health monitoring with **metadata** queries to track upstream & downstream data tables

**Pelmorex (The Weather Network)** | *Software Engineer* Oakville, CA Jan – Apr 2024

- Optimized **SQL** queries on **BigQuery**, reducing execution time to 5s (**84x** boost) and saving **\$3000** annually
- Implemented a **GraphQL** API in Python with **Strawberry** for query generation and database **CRUD** operations
- Developed a new **Slack** bot for seamless integration with the workflow of multiple teams in the company
- Created onboarding documentation for multiple projects along with detailed workflow optimizations

**Eoxys** | *Software Developer* Bengaluru, IN May – Aug 2023

- Led development of audio-based **ML models** for agricultural yield optimization using the **ImagiMob** framework
- Resolved bugs in **C/C++ embedded** software to enable deployment on proprietary low-power microcontrollers

**SAP** | *Data Science* Toronto, CA Jul – Aug 2021

- Sanitized public mental health data for **63 cities** across Ontario using Python's **Pandas & Numpy**
- Correlated income and mental health clinic accessibility through statistical analysis using **SciPy & Matplotlib**
- Used **SAP Analytics Cloud** to present inaccessibility of mental health resources to the City of Toronto Officials

**Orbit Robotics FTC** | *Programming Lead* Oakville, CA Sep – Dec 2021

- Trained object detection **computer-vision** models for precise environmental navigation in competition
- Used **Java** gyroscope and accelerometer libraries, enhancing mobility & winning technical documentation **award**

## Projects

**Automated Journaling** 🔄 | *Open-source Typescript Plugin for Obsidian (note taking app)*

- Leveraged Obsidian's API to automate reminders and templated note creation with robust **error handling**
- Employed support for **mobile & desktop** platforms along with **GitHub workflow** for automatic version updates

**ShareMyFeed** 🔄 | *Go API & Discord.js Bot*

- Built a **Rest API** 🔄 to communicate with and facilitate data transfer to and from **MongoDB**
- Wrote a **Discord** 🔄 client which allows users to use API commands using simple keywords and inputs

**Interpreter** 🔄 | *Interpreter in Golang*

- Implementing a lexical parser and interpreter for a subset of Go with variables, functions and error-handling

**YouTube Scraper** 🔄 | *Python Script*

- Created a YouTube web scraper in **Playwright** to automate scraping personal data with a headless browser