

## SKILLS

- **Languages:** C/C++, Python, Java, JavaScript, Golang, R, SQL, HTML/CSS, Bash, MIPS, ARM | English, Bengali, Hindi
- **Libraries:** React, Tensorflow, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn
- **Other:** AWS, Git, GitLab, Docker, Node.js, NoSQL, \*-nix OS, Jupyter, Jira, L<sup>A</sup>T<sub>E</sub>X

## EXPERIENCE

### BlackBerry Limited

Waterloo, ON

Application Software Developer, Product Engineering (CylanceGATEWAY & BBM Enterprise)

January 2023 - April 2023

- Designed and developed a multithreaded data processing engine to improve packet-capture efficiency, integrated with a ML model to predict C2 beacons from the captured network traffic without peeking at packet data.
- Implemented new features and resolved issues with OIDC and 2FA authentication flows for multiple environments in Gateway's internal testing tool, resulting in a 50% increase in efficiency.
- Enforced adherence to RFC standards and developed highly resilient code for core libraries utilized extensively across multiple BlackBerry projects. Conducted thorough code reviews and performed comprehensive unit testing.

### BlackBerry Limited

Waterloo, ON

Software Developer

May 2022 - August 2022

- Created automated tools with **Python** and **AWS** for release package management improving efficiency by 30%.
- Designed and implemented a JSON configuration file semantic validator in **C++** and integrated it into IVY IVDP.
- Orchestrated a team of four in improving client interaction with the Camera service by successfully implementing the Permission service callback feature, while also creating and publishing Bash scripts to automate building, uploading, and testing, streamlining the software development process.
- Conducted extensive UX research on IVY and code reviews on code written by teammates. Spearheaded documentation effort to improve code readability, productivity, and future intern onboarding experiences.

### MindKraft Education Inc.

Oakville, ON

Software Developer & Coding Instructor

May 2021 - September 2021

- Developed interactive curricula and lesson plans for teaching coding to kids via 6 **Java**, **JavaScript**, and **Python** courses featuring engaging exercises and games (featuring Minecraft), and successfully conducted online classes and summer camps for 10+ students aged 7-12, utilizing illustrative aids to maximize learning outcomes.
- Conducted a comprehensive UI review of the company's websites, identifying key areas for improvement and recommending new features and optimizations that significantly improved website loading times, UX, and traffic.

### Miscellaneous ventures

- **Sportiqo (February '23 - Present):** Working on data visualization using **JavaScript** and football rewards model research and development at a Web3 sports-trading exchange startup.

## PROJECTS

### Traffic Sign Detection | Python (Tensorflow, Keras, Scikit-learn, Matplotlib, Pandas, NumPy)



- Utilized CNNs and image preprocessing algorithms to recognize 43 signs, achieving 95% validation accuracy on a 50k+ image dataset. Visualized model training and validation performance using **Matplotlib** to fine-tune the model.

### Chess Simulator | C++, X11 libraries



- Built a chess application with 3 modes (human vs computer, etc.), 3 levels of computer difficulty, GUI, CLI, and extra features such as undo move, custom game setup mode, move history, threat map, and hints.
- Designed the simulator according to OOP principles (RAII, encapsulation, inheritance, etc.), including design patterns and MVC architecture.

## EDUCATION

### University of Waterloo

Waterloo, ON

Bachelor of Computer Science (Minor in Statistics; A.I. Specialization)

September 2020 - April 2025

- **Relevant Coursework:** OOP, Algorithms, Data Structures, Compilers, OSs, Databases, A.I.
- **Term Distinction:** All academic terms (Fall '20, Winter '21, Fall '21, Winter '22, Fall '22)
- **Organisations:** The Zero Experience, Computer Science Club, Poker Studies Club
- **Awards:** President's Scholarship of Distinction (\$2k), Mathematics International Experience Scholarship (\$5k), Certificate of Distinction in Euclid Mathematics Contest (Top 25% worldwide)