Sat Arora

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US & Canadian Dual Citizen – No work permit required

TECHNICAL SKILLS

Languages: C/C++, Python, Java, JavaScript/TypeScript, Bash, SQL, C#, R, Racket
Technologies: REST, Node.js, MongoDB, Express.js, AWS, PyTorch/Torchvision, Scikit-Learn, Matplotlib, NumPy, Pandas, Linux, Docker, Kubernetes, Java Swing/AWT, Electron, Firebase, Git, React.js, Angular.js

EXPERIENCE

Software Developer | *Miovision*   May – Aug 2023
- Implemented **REST** endpoints to configure traffic detection devices with a new Advanced Transportation Controller (ATC) standard with **Java** and **SQL**, deploying to **3000+ intersections in USA** by Q4 2023
- Collaborated across multi-functional teams in software and device management to build a fluid UX with **Angular.js** for the new ATC controller, tested with **Cypress** for **over 90% coverage**
- Led the backend development of a new export jobs feature using **C#/.NET** for the new traffic study experience **impacting all customers**, allowing users to export reports based on study formats and user permissions

Database Administrator | *Ontario Ministry of Finance*   Sep – Dec 2022
- Reduced database migration time to a **SQL** server solution by automating the extraction of data from old databases, resulting in **90%** faster total extraction time and **saving over 1 month** in the migration process
- **Refactored data file interpreters** to generate **30+** page labour statistics reports with **50%** faster compilation
- Automated the comparison process of weekly economic statistics using **Python** and **Pandas**, resulting in a **70%** decrease in time required to push data to **1000+** statisticians through the intranet site

Computer Science Club President | *University of Waterloo*   Sep 2021 – Aug 2023
- Directed an organizing team of **80+** people and led community-based initiatives for **over 300 club members**
- Co-founded CSC Circles, a recurring initiative of **120+** participants to build friend groups based on interests
- Negotiated **$5000+** with the UW Math Society to fund for events, systems expenses, swag, and office expenses

PROJECTS

Class Activation Mapping and Object Detector 🔗 | *Python, PyTorch/Torchvision, Matplotlib, NumPy*
- Trained a face-detection model using 2000+ images and tested with 500+ images, achieving **99%+** accuracy
- **Extracted image heat maps** for classes using **Global Average Pooling** on the CNN's final convolutional layer
- Generalized the heat map process to work with **multiclass classifier models**, tested for **100+** classes

WatIamLOST 🔗 | *React Native, TypeScript, Express.js, MongoDB, Figma*
- Simulated a free classroom finder and a study room booking system for students to navigate the UW campus
- Won **1st place** at a University of Waterloo Tech Clubs month-long hackathon event
- Worked on the full stack for Login and Study Buddy pages using **React Native** and **Typescript**
- Stored user data and tested corner cases of authentication and bookings with **25+** users on **MongoDB**

FocusCord 🔗 | *Vue.js, Electron, Discord.js*
- Revamped the Discord Do-Not-Disturb notification system to enable customized notification profiles
- Filtered messages by time, sender, and urgency level with the **Discord API** and a **Node.js** server to determine the appropriate notification configuration to send, with response delays of less than **1 second**

RPG Game Engine & Renderer 🔗 | *Java, Swing, AWT*
- Architectured a **Java** interface for users to build their own top-down and platform games, heavily using **object-oriented principles** for customization of enemy damage and type, objects/blocks, and storylines

EDUCATION

University of Waterloo   GPA: **91.5%**
Bachelor of Computer Science   *Sep 2021 – Apr 2026 (Expected)*
- Awarded **1 of 10** René Descartes National Scholarships (**$20000**) from the Faculty of Mathematics for academic standing and distinguished mathematical accomplishment
- Relevant courses: Computer Vision, Machine Learning, Neural Networks, OS, Algorithms, Compilers, Databases