Sat Arora

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US & Canadian Dual Citizen – No work permit required

EDUCATION

University of Waterloo — GPA: **91.4%**

Bachelor of Computer Science (Artificial Intelligence Specialization) — *Sep. 2021 – Apr. 2026 (Expected)*

- Awarded **1 of 10** René Descartes National Scholarships **($20000)** from the Waterloo Faculty of Mathematics
- President of the Waterloo Computer Science Club; cofounded events, initiatives, and the CS Class Profile

EXPERIENCE

Ramp (Incoming) — Sep. – Dec. 2024

Software Engineer Intern – Backend — *New York, NY*

- Product innovation intern for a startup providing businesses with a comprehensive spend management platform

Matroid — May – Aug. 2024

Software Engineer Intern – Infrastructure — *Palo Alto, CA*

- **Optimized Docker container startup time** by removing unnecessary pre-loaded models and refactoring computer vision model inference code in **Python**, simplifying complicated dependencies
- Deployed a high-performance **DHCP server** container for **real-time device detection**, while synchronizing a MongoDB cluster to effectively display and manage connected devices
- **Integrated input cameras as sources for livestreams**, seamlessly integrated into the Matroid app to achieve real-time inference with **no added latency**

Miovision — May – Aug. 2023

Software Engineer Intern — *Kitchener, ON*

- 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

Ontario Ministry of Finance — Sep. – Dec. 2022

Database Administrator Intern — *Toronto, ON*

- 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

PROJECTS

Class Activation Mapping and Object Detector 🔗 | *Python, PyTorch/Torchvision, Matplotlib, NumPy, CUDA*

- Trained a face-detection **CNN** 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, which identified the location of dominant facial features with high accuracy
- Generalized the heat map process to work with **multiclass classifier models**, tested for **100+** classes

WatIamLOST (Hackathon Winner) 🔗 | *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

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

TECHNICAL SKILLS

Languages: Python, C/C++, Java, JavaScript/TypeScript, Bash, SQL, C#, .NET, R, Racket
Technologies: Node.js, MongoDB, Express.js, AWS/S3, PyTorch/Torchvision, NumPy, Pandas, Apache Spark, Hadoop, CUDA, Linux, Docker, Kubernetes, DHCP, Java Swing/AWT, Electron, Firebase, Git, React.js, Angular.js