

# ABHINAV GUPTA

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## EDUCATION

### University of Waterloo

Sep 2020 - Apr 2025

Candidate for Bachelor of Honours Computer Science – Software Engineering Specialization

Relevant Courses – Algorithms, Data Structures, User Interfaces, Database Management, Software Specification & Requirements

## LANGUAGES

TypeScript, JavaScript, C++, C#, C, Kotlin, Java, SQL, Python, Swift, HTML/CSS

## DEVELOPER TOOLS

React, Node, Linux, .NET, MongoDB, PostgreSQL, OracleDB, Elastic Search, ElephantSQL, AWS, GCP, DBeaver, Studio3T, Express, Flask, Redis Cache, Docker, Heroku, Render, TailwindCSS, Next.js, Redux, MeteorJS, Robot Framework, Selenium WebDriver, Swagger, Appium, Cucumber, Jest, Mocha, Jenkins, Postman, Git

## WORK EXPERIENCE

### Cloud Backend Engineer

May 2023 – Aug 2023

Deloitte

Toronto, ON

- Engineered a decoupled system to enable users to search for data from 2,000+ cloud bundles stored in **MongoDB** using **C#** and **.NET**, implementing advanced string matching and a dynamic Mongo query builder for streamlined data retrieval.
- Developed a backend service that automates identifying tasks, through JSON parsing, and scheduling their execution for cloud account provisioning - replacing the manual system, thereby accelerating the provisioning process by **50%**.
- Constructed an object-oriented caching service using **Redis Cache** to enhance cloud account data retrieval speeds by **10x**.

### Backend Engineer

Jan 2023 – Apr 2023

OpenLane

Toronto, ON

- Implemented **AWS Serverless** REST APIs in **TypeScript** with **PostgreSQL** and **Elastic Search** databases to execute business logic for online car auctioning - involved building lambda functions, controllers, query builders, and post-processors.
- Built a **NodeJS** script to run multiple threads in parallel to query 6 million rows of data from **OracleDB** to update development databases weekly. Improved performance by **160%** when compared to single-threaded querying.
- Developed object-oriented backend services incorporating **Angular** concepts that call external APIs from organizations, like TradeRev and Adesa, to combine their auction data into a unified dataset and display them on the platform.
- Formulated 40+ **Cucumber** integration, **Jest** unit, and **Mocha** unit test cases - ensuring code reliability and robustness.

### Frontend Developer

May 2022 – Aug 2022

TutorOcean

Ottawa, ON

- Utilized **ReactJS**, **MeteorJS**, and **CSS** to develop web components to implement new features on the B2C EdTech platform, such as a tutor availability blocking system, and fix over **40%** of issues reported across all B2B SaaS products.
- Diagnosed and documented complex issues by finding patterns in data retrieved from **MongoDB** using **Studio3T**, such as students being able to leave an online session when mandatory input fields in the check-out form are left empty.

### Co-Founder and CTO

May 2022 – July 2023

Serv2U

Waterloo, ON

- Managed and mentored a team of 5 software developers - productivity increased to **2x** by following the Agile methodology.
- Rebuilt frontend web components using **ReactJS**, **CSS**, and **Redux** - resulting in a **50%** increase in platform performance.
- Integrated **JWT** authorization with automatic token refresh through **cron** jobs, using **Flask** with **Python**, into APIs as middleware for a full-stack authentication system - ensuring secure logins and a safer browsing experience for users.

## PROJECTS

### KeyHaven 🔒

- Built a password management platform with industry-level security: master passwords encrypted with **BCrypt** algorithm, passwords stored with **AES-256** encryption, and data sent to client via **HttpOnly** session cookies stored serverside.
- Utilized **Docker** to containerize the **NodeTS** frontend and **Express** backend, ensuring seamless deployment and scalability.

### TripTailor (UofTHacks Project) 🗺️

- Engineered and built a multi-table **PostgreSQL** database to store users, destinations, and their relationships, managed by **ElephantSQL**, for an AI platform that enables users to make travel plans for any country in the world with ease.
- Enhanced user engagement by fetching and displaying images to the **ReactJS** frontend from **Unsplash API**, whose queries consist of countries, cities, and locations being generated with prompt engineering through NLP by **Cohere API**.
- Developed backend REST APIs in **Python** with **Flask** and frontend API calls in **JavaScript**; hosted on **Render** platform.