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, .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 search for 2,000+ cloud bundles stored in **MongoDB** using **.NET** and **C#**, implementing advanced partial string matching on versatile user input 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%**.
- Enhanced cloud data retrieval speeds by **10x** upon constructing an object-oriented caching service using **Redis Cache**.

Backend Engineer — Jan 2023 – Apr 2023
TradeRev — *Toronto, ON*

- Implemented **AWS Serverless** REST APIs in **TypeScript** with **PostgreSQL** and **Elastic Search** databases, which involved building lambda functions, handlers, controllers, query builders, post-processors, and adding on to **Swagger** files.
- Built a **NodeJS** script to run and manage multiple threads in parallel to query 6 million rows of data from **OracleDB** and generate 500,000 rows of data per file. Improved performance by **160%** when compared to single-threaded querying.
- Developed object-oriented backend services that integrate **Angular** concepts, like injection, which call external APIs from organizations like Okta and Adesa. This involved writing **Cucumber** integration and **Jest** and **Mocha** unit test cases.

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.
- Improved the platform's performance by over **50%** by rebuilding frontend web components with **ReactJS** and **CSS**, such as using **Redux** to avoid prop drilling and creating a component library to increase reusability.
- Integrated **JWT** authorization with APIs as middleware for a full-stack authentication system to sign in users onto the platform; used **Flask** with **Python**, where refresh tokens are being updated automatically through **cron** jobs.

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.