ABHINAV GUPTA

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EDUCATION

University of Waterloo   Sep 2020 - (Expected) May 2025
Bachelor of Honours Computer Science – Software Engineering Specialization
Relevant Courses – Intro to AI, Algorithms, Data Structures, User Interfaces, Database Management, Software Design

WORK EXPERIENCE

Machine Learning Engineer Intern   May 2024 – Dec 2024
Bell   *Toronto, ON*

- Built an automated service with **Gemini** LLM to summarize technician work, cutting tech support response times by **70%**.
- Executed DevOps to deploy custom-trained ML models stored as **Docker** images using **Terraform** and **GCP**, enhancing deployment efficiency by **80%**; deployed models used by Field Technicians across Canada.
- Collaborated with Data Engineers to develop a **GitLab CI/CD** pipeline for deploying **GCP CloudSQL** schema changes with **AtlasGo**, **Bash**, and **Makefile**, eliminating DDL mismatches and reducing data migration errors by **90%**.
- Developed a robust **BentoML** unit testing framework with **Python**, **Pytest**, and **Docker** to validate model and API logic for AI projects used by Bell's Data Scientists, reducing errors in production by **50%**.

Cloud Backend Engineer Intern   May 2023 – Aug 2023
Deloitte   *Toronto, ON*

- Engineered a 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.
- Built a backend service that schedules task execution for cloud account provisioning - accelerating the process by **50%**.
- Constructed an object-oriented caching service using **Redis Cache** to enhance cloud account data retrieval speeds by **10x**.

Backend Engineer Intern   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, reducing operational costs by **30%** compared to traditional server hosting.
- Built a **NodeJS** script to run multiple threads in parallel to retrieve 6 million vehicle data from **OracleDB** to update development databases weekly. Improved performance by **160%** when compared to single-threaded querying.
- Formulated 40+ **Cucumber** integration, **Jest** unit, and **Mocha** unit test cases - increasing code reliability by **15%**.

Frontend Developer Intern   May 2022 – Aug 2022
TutorOcean   *Ottawa, ON*

- Utilized **React**, **Node**, **JavaScript**, and **CSS** to implement complex features on the B2C EdTech platform, such as an advanced tutor availability blocking system, and fix over **40%** of issues reported across all B2B SaaS products.
- Optimized frontend performance by refactoring legacy code, resulting in a **25%** improvement in application load speed.

PROJECTS

AI-Powered Company Analysis

- Built an API service with **Python** and **FastAPI** that can give an overview, industries, and services of any company in the world from just their website url using OpenAI's **GPT-4o mini** LLM, hosted on **Docker** for easy scalability.
- Engineered a **RAG** system with **Chroma Vector DB** and **Langchain** using OpenAI's **text-embedding-3-small** model for the LLM to tackle the problem of hallucination; increased the accuracy of responses by **60%**.

KeyHaven ⌭

- Built a password management full stack 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.
- Containerized **NodeTS** frontend and **Express** backend with **Docker**, adding scalability to support a growing user base.

TECHNICAL SKILLS

Languages: Python, TypeScript, JavaScript, C++, C#, SQL, HTML/CSS
Frameworks: AWS, GCP, React, Node, FastAPI, LangChain, .NET, Express, TailwindCSS, NextJS, Swagger, Cucumber, Jest
Developer Tools: Git, Linux, Docker, TerraForm, Kubernetes, Redux, OpenShift, MongoDB, PostgreSQL, OracleDB, Elastic Search, Postman, DBeaver, Studio3T, Redis, Heroku, Jenkins