Gagan Raj Singh

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EDUCATION

Master of Science, Computing Science - University of Alberta — Sep 2022 - Dec 2023
Courses: AI in multimedia, Image and Video Processing, Computer Vision

Bachelor of Engineering, Computer Science - Panjab University — Aug 2016 - May 2020
Courses: Data Structures and Algorithms, DBMS, OS, OOPS, Software Engineering

SKILLS

- **Programming** : C, C++, Python, JavaScript, SQL
- **Web Development** : HTML, CSS, NodeJS, Express, ReactJS
- **Databases** : MySQL, MongoDB, SQLite
- **Version Control** : Github, Azure Devops
- **Miscellaneous** : Linux, Jira, Agile methodology, GraphQL, REST APIs, Pandas, Scikit-learn

WORK EXPERIENCE

Graduate Research Assistant, University of Alberta — Jan 2023 - Present

- Collaborating with a partner company to design and implement a highly efficient market penetration engine that optimizes the process of identifying potential clients.
- Developed and fine-tuned predictive models to output potential client success rates, using Python, Pandas, Scikit-learn, leading to better decision making and business growth.
- Developed a ranking algorithm to compliment the success rate output and identify the top clients.

Associate, Deloitte — Aug 2020 - Aug 2022

- Successfully developed user authentication and profile management webpages for 12 websites and 4 apps using JavaScript, jQuery, and NodeJS in an Agile development environment.
- Led the successful migration of more than 4.5 million user records to a new database by developing Python migration scripts, ensuring minimal disruption to business operations and data integrity.
- Implemented Single Sign-On and Multi-Factor Authentication among all websites and apps.

Intern, Chaincode Consulting LLP — Jan 2019 - July 2019

- Acquired knowledge on the basics of blockchain technology, as well as multiple consensus algorithms such as Proof of Work and Proof of Stake.
- Created proof-of-concepts utilizing Hyperledger Fabric for use cases in the oil and gas industry as well as the health insurance sector.

PROJECTS

Anomaly Detection System, Course Project — Nov 2022 - Dec 2022

- Designed a highly-efficient method to detect anomalies using background subtraction.
- Reduced the anomaly detection time of surveillance videos by up-to 91%.
- Plotted the anomaly score curve for the surveillance video to visualize the results.
- Technologies used: Deep learning, Object detection, Python, PyTorch.

Route Planner, Personal Project — Aug 2019 - Sep 2019

- Computed best possible optimal routes in road networks from a given source to a destination.
- The project helps users with more efficient and accurate route planning for their trips.
- Technologies used: Priority queues, Dijkastra's algorithm, Graphs and other Data Structures.