Manraj **Singh**

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Education

University of Calgary | Calgary, Alberta   *September 2020 - April 2025*
B.Sc. in Software Engineering
- **Awards:** Jason Lang Scholarship, University of Calgary Entrance Scholarship, Alexander Rutherford Scholarship
- **Noteworthy Courses:** Data Structures & Algorithms, Database Management Systems, Software Architecture, Software Testing, Software Design Patterns, Object Oriented Software Development, Embedded Systems

Skills

Languages: Python, Java, JavaScript/TypeScript, HTML, CSS, C/C++, SQL, GraphQL
Frameworks & Tools: Express, Node, React, MySQL/PostgreSQL, MongoDB, TimescaleDB, Redis, JUnit/Jest, Git, Docker, Kubernetes

Experience

Energy Toolbase   *Calgary, Alberta*
Software Developer Intern   *May 2023 - Present*
- Developed microservices and REST APIs to facilitate monitoring of large-scale solar applications.
- Used TypeScript, React and GraphQL to develop features in a React single-page-application.
- Implemented caching using Redis to **improve read/write speeds** for existing microservices.
- Used AWS services to create data pipelines to store data in PostgreSQL and Time-series databases.
- Performed bug fixes and conducted unit and integration tests.

Omnivir   *Calgary, Alberta (Remote)*
Computer Network and Web Development Intern   *July 2022 - September 2022*
- Developed responsive full-stack web applications using modern JavaScript frameworks, HTML and CSS.
- Designed and implemented E-commerce websites using WooCommerce and Shopify along with payment systems to administer subscription-based services.
- Improved **website loading times by 12%** through optimization of code structure and updating dated technologies.
- Improved UI/UX by updating the design of older websites.

Projects

The Loop - MERN Stack Reddit Clone
Designer & Developer
- Created a full-stack Reddit clone using MongoDB, Express, React and Node.
- Initially developed wireframes to visualize overall design and specific React components.
- Added database encryption and authentication using Bcrypt and JWTs.
- **Improved database image retrieval times** by migrating images from MongoDB into an AWS S3 Bucket.
- Used Render.com to individually deploy the backend API and frontend.
- Practiced Test-Driven-Development with Jest and Postman.

Movie Theatre Ticket Reservation System
Developer
- Used Java and Swing to develop a desktop application allowing users to view and reserve movie tickets at multiple theatres.
- Stored movie information, ticket information, user information and other data in a MySQL database.
- Initially **developed a Relational Model/EERD** to visualize database design.
- Wrote unit tests using JUnit to ensure valid business logic.

KNN Vehicle Classification Model
Developer
- Used Python to develop a KNN Classification Model to classify types of vehicles when provided vehicle parameters as input.
- Stored and manipulated data from CSV files into Pandas dataframes.
- Used Numpy to process data and perform calculations used further in the training and testing process.
- Leveraged Matplotlib and Seaborn to generate statistical plots for visual analysis.
- Preprocessed, trained and tested the model using Scikit-learn to achieve a **prediction accuracy of 94.6%**.