

Sambhav Khanna

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EDUCATION

University of Waterloo

Waterloo, ON

Candidate for Bachelor of Computer Science, Specialization in Artificial Intelligence

Sep. 2022 – April 2027

- GPA: 3.94
- Relevant Coursework: Data Structures and Algorithms, Object-Oriented Programming, Sequential Programs, Computer Architecture, Statistics

TECHNICAL SKILLS

Languages: TypeScript, JavaScript, C/C++, Python, C#, HTML/CSS, Rust, Go, R, Racket

Libraries and Frameworks: Express JS, Next JS, Node JS, React JS, Recoil JS, Bootstrap, Flask, ASP.NET Core

Developer Tools: MongoDB, PostgreSQL, MySQL, AWS, GCP, Docker, Git, Linux, Azure, NoSQL

Specializations: Full-stack, DevOps, CI, CD, UI, UX, Machine Learning, Cloud Computing

EXPERIENCE

Programmer Analyst

Sep 2023 – Dec 2023

Toronto Transit Commission

Toronto, ON

- Implemented preventive measures to protect against cyberattacks by developing an encrypted password management application using **React** and **SQL Server**; stored and managed **1000+** logins for **40+** databases.
- Migrated the application tech stack from **Tkinter** to React, using the **Electron JS** architecture to build the React code for desktop app, thereby decreasing the render time by **80%**.
- Containerized the application using **Docker**, reducing the build time from **5 minutes to 5 seconds** by using caching. Deployed the image on **Azure**.
- Optimized the query performance, enhancing the processing speed by **20%**. Built a robust SQL backend by implementing triggers and stored procedures for **15** relations.

PROJECTS

ChatrBox | *MongoDB, React, Express, Node JS, socket.io, nginx, Docker, AWS* 

- Developed an end-to-end chat app using the **MERN** stack (**MongoDB** as database and **React** front-end).
- Implemented a real-time chat server using the **websocket** implementation provided by **socket.io** API.
- Implemented custom hooks and custom contexts using **React Context API** to avoid prop-drilling.
- Developed a client-side routing system using **React-Router-DOM** for smooth transition.
- Containerized the application using **Docker** and deployed the image on an **AWS EC2** instance, used **nginx** as a reverse proxy to accept **HTTPS** requests.

SolGPT | *Node JS, Express JS, solana/web3.js* 

- Developed a **ChatGPT** plugin enabling interaction with the **Solana** blockchain through **RPC HTTP** Endpoints, making it easier for users to access the Solana blockchain.
- Implemented functionalities such as checking account balances, requesting airdrops, retrieving the **NFTs** and their metadata owned by a wallet, and making transactions.
- Built **RESTful API** using **Express JS** framework and integrated it with ChatGPT using OpenAPI spec and JSON manifest file. Created the **OpenAPI spec** using **Swagger** and tested the endpoints with **Postman**.

SkillSync | *MongoDB, React, Next JS, Recoil, Docker, Azure* 

- Developed a course selling web application using **Next JS** utilizing server side rendering.
- Used **Next Auth** for authentication on the backend and enhanced the user interface by using **Tailwind CSS**.
- Optimized **React** rendering by using **Recoil** for state management and achieved containerization using **Docker**.
- Reduced the Docker image size and decreased the build time by using alpine versions and layer caching, then deployed the image on **Docker Hub** and **Azure**.

COMPETITIONS

Joint Entrance Examination Advanced 2022 | *Ranked 5161 out of 155538*

Sep 2022

- Scored in the top **3.3%** of engineering students and got selected into the Indian Institute of Technology.

Joint Entrance Examination Main 2022 | *Ranked 3890 out of 1026799*

Aug 2022

- Scored in the top **0.43%** of engineering students.