Rida-E Fatima

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EDUCATION

Bachelor of Engineering in Computer Engineering, Toronto Metropolitan University, Toronto, CA *2023-2028*

TECHNICAL SKILLS

Programming Skills: Python, JavaScript, C, MATLAB, Java, VHDL
Tools & Frameworks: React, Next.js**,** HTML, CSS, Git, REST APIs, Azure OpenAI, Postman, Firebase (NoSQL), Vercel, ROS2, Ubuntu, VMware, Stripe, OpenRouter, Three.js, Blender, Pinecone

EXPERIENCE

Software Engineering Fellow, Headstarter July *2024 - Sept 2024*

- Built 5+ AI apps using **Next.js, Azure OpenAI, Firebase,** and **Vercel.**
- Led a team of 4 engineering fellows through the entire project lifecycle, from design to deployment, utilizing **MVC design patterns**; cooperated with the team through daily team meetings.
- Received coaching from engineers at Amazon, Bloomberg, and Capital One on **Agile** methodologies, **CI/CD** practices, **Git**, **Azure OpenAI**, and microservice architecture.

Communications & Controls Member, TMU Combat Crafts *Oct 2024 – Present*

- Integrated **Arduino** and **Raspberry Pi** to enhance control precision.
- Set up communication between devices using **ROS2 Humble**, enabling seamless integration of project components over a network.
- Enabled seamless rover operation through a game controller for intuitive and precise handling.

Software Team Member, Toronto MetRobotics *Oct 2024 – Present*

- Engineered a comprehensive rover control system using a video game controller, integrating **PySocket** and **WebSocket** connections to enable real-time interaction resulting in a dynamic control of rover's arm and movement speed with **Python**
- Designed an interactive web UI using **Blender**, **Three.js**, and **React**, providing real-time communication between the rover and interface through WebSocket, ensuring seamless visualization and control—primarily coded in **JavaScript**
- Developed a **Gstreamer** and **GTK**-based GUI for the rover's camera system, utilizing **Python** and **C++** to ensure high performance and usability.

PROJECTS

AI Flashcard App

- Developed an AI-powered flashcard application using Next.js, leveraging **OpenRouter** and **Firebase** for real-time creation and management of customizable flashcard collections.
- Implemented **Clerk** for authentication and **Firebase** for secure data storage, enhancing user access and personalized features.
- Integrated **Stripe** for subscription management with multiple pricing tiers and deployed the app on **Vercel** for fast and scalable performance

Customizable Service AI

- Collaborated with a team of four to develop a customizable AI chatbot solution using **Next.js** and **TypeScript**, tailored to meet diverse business needs.
- Integrated **Firebase** Authentication for secure user management, including account creation, login, and password recovery.
- Implemented **Retrieval-Augmented Generation (RAG)** for dynamic, accurate responses and fine-tuned the chatbot with user-provided datasets

RateMyProfessor AI

- Developed a RateMyProfessor AI chatbot utilizing **Pinecone** for efficient retrieval of teacher ratings based on user queries.
- Integrated **Python**, **JavaScript**, and Hugging Face's **all-MiniLM-L6-v2** embedding model for advanced natural language processing.
- Combined components in **IPython** notebooks for seamless development, with AI trained on sample data and integrated into Pinecone for optimized data retrieval.

Pantry Tracker

- Engineered a pantry management system with full **CRUD** functionality in **Next.js** and **React**.
- Integrated **Groq** for AI-driven recipe suggestions, **Firebase** for secure user authentication and data management, and **Postman** for efficient testing of API requests.