FALAK SETHI

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Education

University of Alberta　　　　　　　　　　　　　　　　　　　　**September 2020 - December 2024**
BSc Computing Science, Minor in Economics
(Certificate in Artificial Intelligence & Innovation and Entrepreneurship)

Technical Skills

Machine Learning & AI: LLMs and NLP, Fine-tuning, RAG architecture, Pathfinding and Search, DNN Optimization.
Programming: Python, Java, C, C++, SQL.
Technologies: Django, React, GitHub, Android Studio, RESTful API, Flutter, OpenCV, LangChain, Power BI, Docker.
Database: Firebase, MongoDB, Microsoft Azure, AWS.

Work Experience

PCL Construction & University of Alberta | Edmonton, AB　　　　　　**January 2024 – September 2024**
AI/ML Researcher

- Pioneered an **LLM**-based model for site engineers, integrating company documents, govt. regulations, and **HSE** guidelines. The model provides real-time instructions, daily updates, and operational insights, now actively used in planning, executing, and surveying large-scale construction projects and process-piping industries.
  Fine-tuned the **Mixtral-8x7B** model with **RAG** implementation. Initiated the project in collaboration with professors at the University of Alberta and the University of Washington.

Viatris | Global Healthcare Company | Etobicoke, ON　　　　　　　**September 2023 – May 2024**
Manufacturing Analytics Intern

- Developed **Power BI** dashboards and enhanced cloud-based data storage using **Python** and **Microsoft Azure** for manufacturing and supply data, focusing on North American and European markets. Conducted **R&D** to design and implement an **AI**-driven model for forecasting future demand and supply trends across global markets, tailored to individual countries.

National Informatics Centre Services Inc. (NICSI) | New Delhi, India　　　　　　　**July 2023**
ML Internship

- Developed an efficient **facial recognition** system for crowded public places using **OpenCV** and **Python** scripting, improving identification accuracy by 25%; implemented **machine learning** algorithms for facial feature detection, **LangChain** for model training. Utilized **Docker** for deployment and scalability across different environments.

JCB India Ltd | Pune, India　　　　　　　　　　　　　　　　　**May 2022 – September 2022**
Software Development Intern

- Worked on the development of the JCB **LiveLink machine tracking** application to track real-time data while the machines are being utilized by customers. Utilized **Java Spring Boot** and **RESTful APIs** for effective interaction between the front and back end, using JSON for data exchange and real-time updates.

Projects

ExplQRer (QR Code game)

- Designed and implemented a user-friendly Android **game** in a group of 6 featuring a unique QR code hunting and scanning mechanism to earn points by exploring the map in the real world and scanning unique codes using **Java** in **Android Studio**. Handled the backend operations using **Firebase**, effectively managing real-time data updates.

Facial Recognition Model

- Advanced facial recognition and crowd counting system with **LangChain** integration, using **OpenCV** and **Python**. Model able to accurately identify and count individuals in crowded images, assisting crowd management strategies and safety protocols.

Certifications/Interests

Leadership & Extracurriculars: Vice President- The Entrepreneurship Club, University of Alberta: Aerial Robotics Group, University of Alberta: RoboMaster (CE-Team). | **Certificate Courses:** German Language A1, A2, B1 (Goethe Institut).