MUDIT GARG

WhatsApp | gargmu@tcd.ie | Portfolio Website | LinkedIn | Dublin, Ireland

PROFILE

As an upcoming **Software Engineer**, I am passionate about building efficient and scalable solutions that measurably improve business outcomes. I have a proven track record of producing such improvements, both as an individual contributor and as a team collaborator. I consistently strive towards attention to detail and perfection while also adopting a growth mindset. Currently, I am looking for opportunities to learn new technologies and grow as a developer.

EDUCATION

Masters in Engineering (M.A.I.). Major in Computer Engineering

Trinity College Dublin, Ireland   **Sept 2023 – Jun 2024**

Coursework: Information Retrieval and Search Optimization, Adaptive Applications, Software Engineering

Bachelors in Engineering (B.A.I.). Major in Computer Engineering

Involved in a 2+2 international credit transfer program based on merit.

Trinity College Dublin, Ireland   **Sept 2021 – Aug 2023**

Coursework: Microprocessor Systems, Computer Networks, Database Management Systems, Deep Learning

Thapar Institute of Engineering and Technology, India   **Aug 2019 – Aug 2021**

Coursework: Data Structures and Algorithms, Operating Systems, Machine Learning, Artificial Intelligence

EXPERIENCE

Software Engineer   **Jan 2023 – Aug 2023**

General Motors   Dublin, Ireland

- Streamlined a microservice written using **Java** and **Spring Boot** for about a **96.4% performance boost**, refactoring it from top to bottom, resulting in reduced tech debt by **23%** and reduced resource utilization across the whole pipeline.
- Collaborated with senior developers across various time zones to utilize **6 internal relational databases** to develop comprehensive **Power BI** reports, for increased productivity and faster user feedback adoption among internal teams**.**
- Spearheaded the development of various UI elements of an **Angular** application, utilizing industry-standard UI/UX practices, resulting in improved design consistency, user response, and focused functional accessibility.

SKILLS

Languages:	Java, Python, C/C++, Dart, SQL, JavaScript/TypeScript, HTML/CSS, ARM Assembly
Frameworks:	Spring Boot with Maven, Flutter, React with JavaScript, Flask
Databases & Libraries:	MySQL, PostgreSQL, Firebase Firestore, ScikitLearn, Numpy, Tensorflow, OpenCV
Tools:	Git, GitHub, Azure DevOps, Docker, Kubernetes, Jupyter, Power BI
Core Concepts:	Object Oriented Programming, Refactoring, Debugging, Agile, Scrum, Generative AI, CI/CD

PROJECTS

Portfolio Website with RAG based chatbot   Oct 2024

React, JavaScript, NPM, Python, Flask, ChromaDB, LangChain, Gemini 1.5 Flash API

https://muditgarg48.github.io

- Built a dynamic portfolio website using **React** and **JavaScript**, increasing recruiter engagement by **30%** through streamlined access to professional details and achievements, with improved user experience and adoption by **18%** (user survey).
- Integrated an AI chatbot with **Gemini 1.5 Flask API** and **ChromaDB**, enabling query-driven exploration of my portfolio, improving user interaction efficiency by **40%** with precise answers and guided navigation.

Gesture recognition-based device control   May 2024

Python, Jupyter, Tensorflow, OpenCV, Numpy, ScikitLearn, Google Mediapipe, Home Assistant

https://github.com/muditgarg48/gesture_based_device_control

- Utilized a custom **LSTM neural network** to develop a gesture recognition model that trains and recognizes gestures using limited datasets resulting in a consistent accuracy of about **93%** (manual rough estimate).
- Streamlined and automated the whole development process from project setup to IoT device communication using various **Python** packages like **Mediapipe** and **OpenCV** for key point extraction, **Tensorflow, NumPy and Scikit-Learn** for model preparation and training and **Home Assistant** for IoT device communication.

Candle in Dark   Mar 2024

Flutter, Dart, Firebase, Google Cloud, XML

https://muditgarg48.github.io/candle_in_dark_web/

- Ideated and developed **a cross platform responsive app** using **Flutter**, **Firebase** and **Google Cloud**, serving as a platform for all the info for the newly arriving students of Trinity College to know everything about Trinity and Ireland.
- Implemented several interwoven intricate systems including **user authentication using Google Sign-In, user authorization, role-based access, feedback collection system, light/dark mode, admin panel, etc**.