Abhimanyu Singh

Jaipur, Rajasthan

└ <u>+91-8118838215</u> **☑** abhimanyus1997@gmail.com **in** <u>Linkedin</u> **?** <u>Github</u>

EDUCATION

Defence Institute Of Advanced Technology (DIAT), DRDO

2021-2023

M. Tech - Automation and Robotics Engineering - CGPA - 8.47

Pune, Maharashtra

LNM Institute Of Information Technology

2015 - 2019

B. Tech - Mechanical Engineering - CGPA - 8.16

Jaipur, Rajasthan

EXPERIENCE

Junior Research Fellow

06/2023 - Present

 $Technology\ Innovation\ and\ Development\ Foundation,\ IIT\ Guwahati$

Pune, Maharashtra

Summer Intern

05/2017 - 06/2017

The Akshaya Patra Foundation, Jaipur, Rajasthan

Jaipur, Rajasthan

PROJECTS

FarPotion - Token Whitelist Blockchain, Dune API, SQL, React, Javascript, ThirdWeb, Vercel 2023

- Developed an ERC-20 token claiming platform exclusively for whitelisted users active on Zora & Base blockchains.
- Analyze the holders of a specific NFT (ERC-721) using SQL query on Dune Analytics
- Added a secured Claim page has been developed on the Base Sepolia Testnet, accessible only to eligible users for minting the \$FPN Token

Langchain One - Image Based Chatbot ☑ | Langchain, Chainlit, Python, LLM, EasyOCR 2023

- Developed a Multi-Modal chat interface using Langchain framework, featuring Chainlit for enhanced user interaction, and incorporating the Mistral 7B v0.1 LLM model to generate contextually relevant responses.
- Added Image Upload Functionality and the integration of EasyOCR, a DL-based solution for extracting both typed and handwritten textual data)
- Enhanced model performance by applying Fine-Tuning on the LLM using Few-Shot Prompt Technique, resulting in improved responsiveness to user queries.

<u>cryptoTracker - Wallet Dashboard</u> ☑ | <u>Flask, SQLite, Rest, Websockets, ChartJS, Bootstrap</u> 2023

- Developed a crypto asset tracker dashboard that provides real-time insights into users' Ethereum blockchain wallets without any APIs.
- Added support for ENS Name Resolution, Token Tracking, Dedicated Profile Page, and User account in the Full Version.
- Implemented a Lite Version featuring Live Price tracking and Top Tokens info presented as Charts.

Transfer Learning in Alzheimer's Disease Classification | Tensorflow M.Tech Dissertation, 2023

- Performed preprocessing on medical images from the ADNI dataset in DICOM format, converting them into PNG/JPG format for further analysis.
- Implemented data augmentation techniques to address imbalanced datasets in Alzheimer's disease classification.
- Evaluated and compared state-of-the-art CNN architectures such as ResNet, AlexNet, and VGG-16, analyzing the effect of hyperparameters on validation accuracy.
- Designed an ensemble deep learning model based on optimal model parameter selection, testing different hyperparameters to achieve optimal performance.

- Developed a client-side web application and Android app enabling users to create pencil sketches from personal photos.
- Implemented advanced image processing using OpenCV.js, Apache Cordova, and Bootstrap, prioritizing user privacy by processing images locally.
- Designed an intuitive user interface, empowering users with complete control over the sketching process for personalized results.

Pipe Inspection Robot 🗷 | MQTT, IoT, MicroPython, Embedded C, Raspberry Pi, Cordova 2018-2019

- Led the development of a Pipe Inspection and Cleaning Robot utilizing ESP32, Raspberry Pi, and MQTT for seamless control and communication.
- Designed and implemented a hybrid Android application enabling motor speed control, telemetry data retrieval via MQTT protocol, and live RTSP video streaming for real-time monitoring.

SKILLS

Languages: Python, C++, C, JavaScript, SQL, LaTeX, Shell Script, Matlab Programming

Technologies/Frameworks: TensorFlow, OpenCV, Langchain, Git, BeautifulSoup, Selenium, HTML5, CSS3, FastAPI, Django, Flask, MongoDB, React, NodeJS, Bootstrap, PostgreSQL, SQLite

Developer Tools: VS Code, PyCharm, Jupyter, Canva, Blender, Solidworks

PUBLICATIONS/PRESENTATIONS/ARTICLES

- Published article "The Evolution of Object Detection: YOLO & NAS Revolutionizing Computer Vision" on IndiaAI.gov.in.
- Paper presentation: "Subaqueous Crack Detection using Fusion-Based Image Enhancement for Dam Structure" as part of "Underwater Vision-Based Surveillance and Tracking using Machine Learning" at the 4th International Conference on River Corridor Research and Management (RCRM) 2024 hosted by IIT Guwahati & IIT Jammu

CERTIFICATIONS

- Qualified GATE 2024 in Data Science and Artificial Intelligence (DA) with All India Rank (AIR) 3614
- Python for Computer Vision with OpenCV and Deep Learning Udemy
- Machine Learning A-Z[™]: Hands-On Python & R In Data Science Udemy
- Tools for Data Science IBM & Coursera
- Python for Data Science, AI & Development IBM Coursera
- AWS IoT: Developing and Deploying an Internet of Things Coursera
- Data Science Methodology IBM Coursera
- Python Project for Data Science IBM Coursera
- SQL (Intermediate) Certificate HackerRank
- Rest API (Intermediate) Certificate HackerRank

EXTRACURRICULAR

- Produced AI artworks and paintings using Automatic1111, demonstrating proficiency in creative AI applications.
- Independently designed and constructed robots and IoT devices, showcasing practical skills in robotics and hardware development.