

# PRATIK RANA

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## EDUCATION

### Plaksha University, Mohali

Bachelor of Technology, Computer Science & Artificial Intelligence,

Mohali, India

August 2022 - May 2026

**Coursework** | Data Structure, Algorithms, Database Management, Machine Learning, Computer Networks, Operating Systems, Object-Oriented Programming, Distributed Systems, Software Engineering, Data Mining

## EXPERIENCE

### Havells India (R&D)

ML Research Intern

May 2024 - July 2024

Noida, India

- Developed a **sales forecasting model** using **SARIMA**, **statsmodels** & **Tensorflow**, improving the **prediction accuracy by 22%**, aiding in the inventory management & and strategic planning.
- Conducted **exploratory data analysis & feature engineering** to improve model accuracy and robustness.
- Crafted a **scalable data pipeline** using **Apache Spark**, processing data of over **60 SKUs** for model training.
- Developed **RESTful APIs** for data analytics, improving **data retrieval speed by 30%** and reducing latency.
- Collaborated with **cross-functional teams** to integrate machine learning models into the **production environment**, ensuring seamless operation and high availability.

**Tech Used** | ML, API Development, Apache Spark, Cloud Computing (AWS S3), Optimization, Scalability, Python.

## ACHIEVEMENTS

- Airtel Scholar** | Awarded By the Bharti Airtel Foundation. One of the **58 scholars nationwide**. [Link](#)
- UN Fellow** | Chosen from 44,000+ global applicants for leadership & tech solutions addressing the **UN SDGs**. [Link](#)
- Winner @ HackPlaksha'24** | **1st runner up** in the Hackathon. Developed PodPit in under 48 hours. [Link](#)
- Reliance UG Scholar** | Selected out of 40,000+ applicants nationwide for academic & leadership excellence. [Link](#)
- IBM Quantum Qiskit Summer School'24** | Gaining hands-on experience with **Qiskit framework** and implementing **quantum computing** algorithms. Explored applications in optimization, and machine learning. [Link](#)

## PROJECTS

### NeuroTone.AI (ML for Neurological Disorder Detection | Dr. Siddharth)

[Link](#)

- Led a **4-person team** to develop an **audio-based Parkinson's detection model** with **87.46% accuracy**.
- Implemented a **LSTM & RNN based architecture**, improving **precision by 15%** over previous models.
- World's first multilingual** Parkinson's detection model, maintaining **>80% accuracy** across three languages.

### ImageCraft (Full-stack AI Image Processing Platform | Pytorch, Flask, React, Docker | Open Source)

[Link](#)

- Implemented **image classification (82% accuracy)** using **MobileNetV3**, fine-tuned on **15000+ images**.
- Created an **image-to-text captioning model (0.74 BLEU)** score based on **ViT-GPT-2** and **COCO dataset**.
- Reduced API response time by **3x** by building a **distributed Flask backend** for concurrent request handling.
- Containerized the application** using **Docker** and deployed it on **Docker Hub** and **GKE** for seamless scaling.

### PodPit (AI-driven podcast generation platform | Llama2, React, Flask, TailwindCSS | HackPlaksha'24)

[Link](#)

- Engineered an end-to-end **AI podcast platform** that generates **20-minute podcasts** in just **3 minutes**.
- Integrated **Llama2** for **Natural Language Generation**, **gTTS**, and **RVC** for human like voice quality.
- Enhanced user experience with **personalized accounts** by implementing **JWT token-based authentication**.

## SKILLS

Languages	Python, C/C++, JavaScript, Bash, MATLAB, HTML/CSS, SQL (PostgreSQL)
Frameworks	Django, Flask, Express.js, React, LangChain, FastAPI, TailwindCSS, Next.js
Tools/Tech	Unix/Linux, Git, GCP, AWS (S3, SageMaker, EC2), Node.js, Docker, HuggingFace, Postman, MongoDB
Others	PyTorch, TensorFlow, scikit-learn, Pandas, Shell Scripting, Natural Language Processing, Gen. AI

## LEADERSHIP & EXTRACURRICULAR

### Open Source | GSSOC'24 – Contributor

- Contributed to more than **8 organizations**, resolving 25+ issues in AI/ML and Python backend projects. [Link](#)

### Healthec.AI – Project Lead | Javascript, GPT3, Node.js, Nginx

- Led a team of 6 and developed a **remote healthcare platform**, to increase **healthcare access in rural India**.
- Recognized at **United Nations** and **IIT Mandi's Himalayan Startup Trek 2023**. [Link](#)