

Dharani Ravva

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Overview:

I'm a Computer Science postgraduate student with a strong interest in **Machine Learning, Computer Vision, and Generative AI**. I enjoy exploring how intelligent systems can solve real-world problems and improve human experiences. I've worked on projects involving **deep learning models, data analysis, and optimization algorithms**, both independently and as part of a team. My research experience has helped me understand how to turn complex ideas into practical solutions. I'm passionate about using technology to build **useful, ethical, and scalable AI systems** that make a real impact.

Technical Skills:

- **Programming:** Python, C++, Java, MATLAB, Go
- **AI/ML Frameworks:** TensorFlow, PyTorch, Keras, OpenCV, Hugging Face Transformers
- **Research & Modelling:** Deep Learning, NLP, Computer Vision, Generative AI, Optimization Algorithms, Human-Computer Interaction
- **Data Science Tools:** NumPy, Pandas, Scikit-learn, Matplotlib, Seaborn
- **Database & Cloud:** PostgreSQL, Google Cloud Platform (Vertex AI, BigQuery), Firebase
- **Version Control:** Git, GitHub, GitLab
- **Research Tools:** LaTeX, Jupyter Notebook, Kaggle, Colab, MATLAB Simulink

Projects:

Global Terrorism Prediction and Threat Analysis - 2025

Built an AI-driven terrorism risk prediction system using **LSTM** and **BERT**, combining **NLP** and **time-series analysis** with interactive dashboards for actionable insights.

AI-Powered Fraud Detection System - 2026

Built an explainable, threshold-aware fraud detection system using **XGBoost**, **CatBoost**, **SHAP**, **Flask**, and **React**, aligning machine-learning predictions with real-world e-commerce fraud decision workflows.

Education:

MSc Computer Science

Birmingham City University, Birmingham, UK | 2025 – 2026 (Expected) Modules:

- **Machine Learning and Artificial Intelligence:** Covered supervised, unsupervised, and reinforcement learning techniques, deep neural networks, and their applications in real-world systems.
- **Big Data Analytics:** Explored large-scale data processing, data mining, and visualization using Python, R, and Apache Spark.
- **Cloud Computing and Data Engineering:** Focused on distributed computing, serverless architecture, and data pipeline optimization using Google Cloud and AWS.
- **Advanced Algorithms and Data Structures:** Studied algorithmic problem-solving, optimization, and computational complexity for AI and research applications.

Other modules studied:

Software Design and Development, Web Application Development, Research Methods and Project Management.

Bachelor of Technology (B.Tech) in Electronics and Communication Engineering Malla

Reddy Institute of Technology and Science, Hyderabad, India | 2018 – 2022 Modules:

- **Digital Signal Processing:** Learned principles of image and speech processing using MATLAB and Python.
- **Embedded Systems and Internet of Things (IoT):** Designed small-scale systems integrating sensors and microcontrollers.
- **Data Communication and Networks:** Studied network protocols, routing algorithms, and wireless communication.
- **Control Systems and Automation:** Applied mathematical models for system stability and performance analysis.

Other modules studied:

Computer Networks, Microprocessors, VLSI Design, Engineering Mathematics, Communication Systems.

Certification:

IBM Machine Learning Professional Certificate (5 Modules Completed) | IBM Skills Network / Coursera

- **Module 1:** Machine Learning with Python – Hands-on introduction to supervised, unsupervised, and reinforcement learning.
- **Module 2:** Data Analysis and Visualization – Data pre-processing, feature engineering, and model evaluation.
- **Module 3:** Deep Learning and Neural Networks – Implementation using TensorFlow and Keras.
- **Module 4:** Applied AI and Automation – Building AI-driven automation workflows.
- **Module 5:** Model Deployment and MLOps – Deploying ML models using Flask and IBM Cloud.

Experience:

Software Engineering — Cognizant Technology Solutions, India

(Feb 2023 – June 2024)

- Designed and implemented **AI-assisted automation scripts** using Python and OpenCV for process validation tasks.
- Improved system performance by **30%** through optimized algorithmic implementations and parallel computing techniques.
- Worked in agile environments contributing to **RESTful API development** and **data analytics systems** using **Flask** and **PostgreSQL**.

Achievement:

1st Place – AI-Based Healthcare System (Oracle Hackathon 2025):

Designed and deployed an intelligent healthcare solution using **Oracle APEX** and **machine learning algorithms** for patient risk prediction and data analysis, outperforming 40+ teams for innovation and technical excellence.

Tech used: **Oracle APEX | SQL | Python | Machine Learning | Data Analytics**

Best Technical Innovation – WMHTIA HealthTech Hackathon 2025:

Won Best Technical Innovation at a 3-day HealthTech hackathon hosted by Birmingham City University and sponsored by Kollesteek UK Global. Developed a production-ready AI system for detecting and analysing hair grafts from 3D scalp point-cloud data, integrating advanced 3D computer vision, deep learning, and interactive visualisation to support real-world medical decision-making.

Tech used: **Python, PyTorch, Open3D, FastAPI, Next.js, Three.js**