Hardik Garg

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EDUCATION

B.Tech in Computer Science and Engineering, Manipal Institute of Technology, Manipal 2022 – 2026

Specialization: Artificial Intelligence and Machine Learning
Minor Specialization: Digital marketing

Relevant Coursework: Deep Learning, Computer Vision, Database Management Systems, Big Data Analytics, Operating Systems, Data Structures and Algorithms, Object-Oriented Programming, Artificial Intelligence, Parallel Computing, Formal Language and Automata Theory, Digital Systems & Computer Organisation.

TECHNICAL SKILLS

Languages: Python, Java, C, Dart, SQL
Frameworks/Tools: Flutter, Android Studio, Tensors, Pandas, NumPy, Matplotlib, Git.
Cloud & Tools: Firebase, GitHub, Figma
Soft Skills: Leadership Qualities, Public Speaking, Event Management, Problem Solving

Experience

Software Research Intern, Raphe mPhibr, Noida May 2025 – July 2025

- Developed an autonomous drone landing system capable of landing on moving targets such as ships, used softwares to coordinate multi-vehicle simulations.
- Developed a Python-based interface to control and communicate with a Camera, enabling media capture and integration with a Ground Control Station.
- Designed C++ modules to integrate Autopilot software with AI algorithms for real-time UAV control

Android Development Intern, Manipal Institute of Technology, Manipal June 2024 – July 2024

- Developed an online ticket booking application using Java and Firebase for the backend.
- Acquired and deepened knowledge in native Android development with Java.

App Development Head, ACM [Association for Computing Machinery], Manipal Sept 2024 - Sept 2025

- Mentored a 110-member team in Flutter and native Android development while leading projects like an ACM app and a cross-domain recommendation system.

Projects

FeelAI – Adaptive Emotion Recognition Chatbot github.com/GhouLsus

- Developed a voice-enabled mental health chatbot using LLaMA-70B and Retrieval-Augmented Generation (RAG) to deliver CBT-aligned, empathetic responses. Implemented real-time sentiment analysis with a custom DistilBERT model trained on the EmpatheticDialogues dataset, integrated semantic search with FAISS, created a mobile app for accessible therapeutic support.
- Tools Used: Python, PyTorch, FastAPI, FAISS, DistilBERT, LLaMA-70B, Flutter, Firebase, OAuth 2.0.

Advanced Vehicle Tracking and Speed Estimation System

- Developed a real-time system for vehicle tracking and speed estimation in aerial surveillance using optical flow analysis. Conducted a comparative analysis of Shi-Tomasi and Harris corner detectors, optimizing processing time by 45.3 % with no loss in accuracy. Utilized DBSCAN clustering to ensure robust vehicle tracking.
- Tools Used: Python, OpenCV, NumPy, SciPy

Customer Churn Prediction using XGBoost and Artifical Neural Networks

- Designed and implemented a hybrid customer churn prediction system for the telecom sector, combining XGBoost and artificial neural networks (ANN) via a meta-learning architecture. The system leveraged advanced feature engineering techniques like categorical encoding, and numerical scaling, achieving 89.7% accuracy.
- Tools Used: Python, XGBoost, TensorFlow, Keras, scikit-learn, NumPy, Pandas