

Manthan Mittal

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PROFILE

Motivated and adaptable professional with an MSc in Artificial Intelligence and a BE in Information Technology. Skilled in machine learning, deep learning, robotics simulation, and full-stack development. Strong problem-solving ability, teamwork, and adaptability with a passion for applying AI to create impactful solutions.

EDUCATION

University of Essex
MSc in Artificial Intelligence

Oct 2023 – Oct 2024
United Kingdom

Ahmedabad Institute of Technology (AIT)
Bachelor of Engineering in Information Technology

2018 – 2022
Gujarat Technological University

EXPERIENCE

Silver Touch Technologies Ltd.
Android Development Intern

Jan 2022 – Apr 2022
Ahmedabad, GJ

- Developed **Chat-APP**, a real-time Android messaging app.
- Built backend using **Firebase + Express.js**.
- Implemented real-time sync and user authentication in Java + Android SDK.

CAD DESK
Python Programming Intern

June 2021 – July 2021
Jaipur, RJ

- Completed a 30-day intensive internship focused on Python development.
- Worked in structured environment with project deadlines.

PROJECTS

Feedforward Neural Network for Robotic Kinematics | *Python, NumPy, Math*

- Implemented a Multi-Layer Perceptron (MLP) from scratch using NumPy to predict non-linear robotic control parameters.
- Diagnosed and rectified critical architectural errors in the training loop and corrected the RMSE loss function logic to ensure stable model convergence.
- Developed a dynamic output layer architecture to automatically adjust to varying dataset dimensions.

Rossmann Store Sales Forecasting | *Python, TensorFlow, Scikit-Learn, XGBoost*

- Engineered an end-to-end predictive pipeline for 1,115 drug stores, processing over 1 million historical sales records.
- Conducted a comparative analysis between Tree-based ensemble methods (XGBoost) and Deep Learning architectures (LSTM, RNN) to capture long-term temporal dependencies.
- Optimized model performance using Root Mean Square Percentage Error (RMSPE), effectively handling seasonality.

Autonomous Robot Navigation System | *ROS2, Gazebo, Python, C++, Fuzzy Logic*

- Developed a PID-based wall-following controller using LIDAR sensor data to maintain precise distance constraints in a TurtleBot simulation.
- Implemented a Fuzzy Logic inference system for dynamic obstacle avoidance, defining membership functions for real-time velocity adjustments.

- Engineered a hybrid control architecture that seamlessly switches between wall-following and obstacle avoidance behaviors based on environmental proximity thresholds.

Narrative-to-Clip Generator (Text-to-Video Synthesis) | *Python, PyTorch*

- Built a diffusion-based AI system to generate short video clips from text prompts.
- Implemented using Python, PyTorch, Transformers, and diffusion pipelines.

Sleep Pattern Analysis | *Machine Learning*

- Developed ML models to analyze sleep data and identify abnormalities.

DocInsight: Retrieval Q&A Engine (RAG) | *LLMs, Vector DB*

- Developed a RAG system to answer questions from unstructured PDFs/documents.
- Included embedding generation, vector search, context filtering, and guardrail evaluator.

Web Task Autopilot (Autonomous Agent) | *Selenium, LLMs*

- Built an AI-driven autonomous browser agent for navigation, clicking, form-filling, and data extraction.
- Used LLM reasoning loops integrated with Selenium/Playwright automation.

E-commerce Platform for Indian Sarees | *MERN Stack*

- Live full-stack platform with product browsing, authentication, cart, and order dashboard.

SKILLS

Robotics & Simulation: ROS2, Gazebo, TurtleBot, LIDAR Integration, PID Control, Fuzzy Logic

AI/ML: TensorFlow, PyTorch, Scikit-learn, Neural Networks, CNNs, RNNs, GNNs, LLMs

Programming: Python (Advanced), C++, JavaScript, Java, React, Node.js, SQL

Cloud & Databases: Oracle OCI, AWS, Firebase, MongoDB, SQLite

Soft Skills: Problem-solving, Communication, Teamwork, Time-Management

CERTIFICATIONS

Oracle Cloud Infrastructure 2025 Certified AI Foundations Associate

Programming with Python and IoT Perspective Panjab University (2021)

E-Workshop on Android AIT (2020)

E-Workshop on AWS AIT (2020)