UDITHA MALAGUNDLA

AI&ML UNDERGRADUATE STUDENT

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SUMMARY

Highly motivated AI enthusiast pursuing a BE in AI & ML at BMS College of Engineering with a strong background in machine learning and python programming. Passionate about research and continuous learning, actively involved in college clubs and projects, aiming to leverage technical skills in innovative AI solutions. Possess exceptional communication and interpersonal skills with a proven ability to work independently and as part of a team.

TECHNICAL SKILLS

- Programming Languages: Python(Proficient), Java (Basics), C (Basics), ReactJS
- Frameworks: TensorFlow, PyTorch
- Tools & Technologies: Machine Learning, Deep Learning, SQL, Netbeans, Github
- Graphic Design: CorelDRAW (Basic proficiency)

PROJECTS

Vigiliant AI : A smart safety system (Currently Working)

- Developed a AI-Powered Real-Time Attack Detection & Safety Response system multimodal sensor data from wearable and smartphone devices.
- It is specially designed for vulnerable groups like women, children, elderly
- Designed deep learning models to identify abnormal behavior through motion, audio, heart rate and temperature of an individual and detect an attack.
- Integrated automated SOS alert system that system that shares live location and notifies emergency contacts during high-risk situations.
- Built a user-friendly Android app enabling continuous monitoring and real-time emergency response.

Parking Vacancy Detection using MLOps Pipeline

Built an end-to-end MLOps system for real-time parking occupancy detection using image classification.

- Designed a CNN-based model to classify parking spots as “free” or “busy” using the CNRPark+EXT dataset.
- Automated the ML lifecycle with MLflow for experiment tracking and DVC for data versioning.
- Containerized the model using Docker and deployed it on AWS EC2 via a CI/CD pipeline with GitHub Actions.
- Developed a REST API with Flask and integrated monitoring using AWS CloudWatch and logging via Docker.
- Implemented data drift detection and model retraining pipeline with scheduled GitHub workflows.

PCOS Detection using Convolutional Neural Networks

- Developed a deep learning-based system for the automatic detection of Polycystic Ovary Syndrome (PCOS) using Convolutional Neural Networks (CNNs)
- Trained a CNN model to classify medical images, identifying PCOS-related features with high precision.
- Integrated data preprocessing techniques to enhance image quality and improve model accuracy.
- Evaluated model performance using metrics such as accuracy, precision, and recall, achieving significant diagnostic accuracy.

GeoClusterLens – Clustering & Visualization of GeoTagged Images using DBSCAN

- Implemented DBSCAN algorithm for unsupervised clustering of latitude-longitude data with noise/outlier handling.
- Extracted latitude and longitude from EXIF metadata of .jpg or .jpeg images.
- Applied DBSCAN clustering on the geolocations to group images taken nearby.
- Generated an interactive HTML map with clustered markers using Folium and also saves clustered image metadata to a CSV file for further analysis.

Automatic Melody to Lyrics Generation System

- Developed a system that generates song lyrics based on an input melody and keyword.
- Designed an LSTM-based model to generate song lyrics aligned with melody features like pitch and tempo.
- Integrated melody analysis with text embeddings for rhythmic and semantic coherence.
- Built a GUI using Tkinter for user-friendly input of seed words and melodies.
- Achieved 39% accuracy, balancing originality and copyright compliance.

HR CHATBOT

- Developed an interactive HR chatbot using Python and Gradio to assist employees with HR-related queries like leave policies, payslip info, work-from-home rules, and manager contact.
- Implemented dynamic greetings and context-aware responses to enhance user engagement and chatbot usability.
- Simulated dynamic HRMS data like leave balances and manager contacts by integrating static JSON data within the chatbot logic to provide personalized responses.

Music Recommendation System

- Developed a music recommendation system that suggests songs based on the user's location, current weather, and mood.
- The system uses facial recognition to detect the user's mood and adjusts music recommendations accordingly.
- It also considers past listening preferences and adapts to the user's environment and time of day for a personalized experience.

Space Invaders – Python Arcade Game using Pygame

- Developed a 2D arcade-style game using the Pygame library for real-time rendering and user interaction.
- Designed an interactive UI including “Play” and “Restart” buttons, “instruction screens” and “dynamic scoring”.
- Implemented collision detection between bullets and aliens, and programmed **game over triggers** upon alien-ship contact.
- Engineered real-time event handling, alien generation logic, and smooth keyboard control for seamless gameplay.
- Focused on user engagement through clean graphics, animated components, and responsive design.

Testing Drug efficacy

- Statistical models to validate hypothesis on drug efficacy to identify if it is placebo effect or not.

Smart expense splitter

- Java application to split cumulative trip expenses amongst group members and shows total expenses and outstanding payables

EDUCATION

Bachelor of Engineering in Artificial Intelligence & Machine Learning **2022 - 2026**

BMS College of Engineering

- CURRENT CGPA:8.64

Shri Ram Global School **2022**

- 12th boards : 84%

Afflatus Global School **2020**

- 10th boards : 99.3%

EXPERIENCE

Hattyhood - Internship

- Digital marketing intern at Hattyhood, sustainable gifting startup
- Ideated social media promotional content across all meta channels, boosted page reach of 3K+
- Crafted product designs for 5+ gifting solutions, including t-shirts, stationary, mementos

EXTRACURRICULAR ACTIVITIES

- Design team lead, Robotics club, led team of 3+ students, crafted 10+ marketing collateral
- Event POC, cultural night, liased with 5+ stakeholders, managed footfall of 250+ students
- Co-ordinator, seminar on GenAI for freshers, organized by Codelocked, coding club of BMS
- Core member, Gradient club, AI, ML club of BMS, organized 2+ events in Phaseshift
- Participant, eYantra, 2023, inter-college robotics competition organized by IIT Bombay
- School Captain:Demonstrated leadership and organizational skills during school days.

ADDITIONAL INFORMATION

- **Languages:** English, Telugu, Hindi.
- **Certifications:** CS50 - Harvard university online course (INTRODUCTION TO ARTIFICIAL INTELLIGENCE), CS50 - Harvard university online course (Introduction to Programming with Python), BASICS OF C PROGRAMMING, ReactJS Workshop