Narasimha Reddy Machha
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PROFESSIONAL SUMMARY

I am a master's student in Artificial Intelligence with 2+ years of hands-on experience in building and deploying machine learning solutions. I specialize in developing real-time inference systems, optimizing ML pipelines, and working on models for classification, ranking, and personalization. Proficient in Python and SQL, with practical experience in cloud platforms like AWS and GCP. Skilled in building NLP workflows, designing data pipelines and deploying models using tools like Docker, Jenkins and Gradio. I bring data driven mindset to problem solving and excited to contribute and learn from the team.

EDUCATION

University of North Texas, Denton, Texas — 08/2023-05/2025
Master of Science in Artificial Intelligence — GPA:3.5/4.0
DVR & Dr. HS MIC College of Technology, India — 06/2018-08/2022
Bachelor of Technology in Electrical and Electronics Engineering — GPA:3.5/4.0

SKILLS

- **Technical Skills:**

- Languages: Bash, C, Python, Java, SQL, HTML, JavaScript, Node.js, Data Structures and Algorithms.
-Libraries: TensorFlow, scikit-learn, Pandas, NumPy, Matplotlib, PyTorch, Seaborn, NLTK.
-Machine Learning: Classification, Regression, Model Tuning, Experiment Tracking, Calibration.
-NLP & GENAI: Prompt engineering, sentiment analysis, real-time scoring, Gradio, LLM.
-Cloud Platforms: AWS, GCP, Snowflake.
-Tools & MLOps: Docker, Jenkins, CI/CD, Github, Heroku, VS Code.
-Operating Systems: Windows, Linux.
-Data Engineering: ETL pipelines, Data cleaning, Feature engineering, Apache Spark, Hugging Face, Airflow.
-Microsoft Office suite: Microsoft Word, Excel, PowerPoint, Outlook, Report Writing.
-Soft Skills: Technical reporting, Verbal &Written Communication, Team Leadership.

EXPERIENCE

Internship (APSSDC, Andhra Pradesh, India) — 01/2022-05/2022
Embedded Systems Intern

- Developed and evaluated embedded C firmware for 8051-based microcontrollers using the Keil uVision (C51) to control sensors and logic for Arduino-style prototypes.
- Designed and simulated the circuit in Proteus to make sure the timing was accurate, and sensors worked reliably.
- Built a Smart Car Parking system using HC-SR04 ultrasonic sensors on an Arduino, where I fine tuned the model to get 95% accuracy in detecting vehicles.
- Created logic for object detection, ran tests and improved the code and sensor calibration to make the model more precise.

Web Developer (Creators Touch, Andhra Pradesh, India) — 08/2022-06/2023
Junior Web Developer

- Designed and managed MySQL database schema, optimized SQL queries for data retrieval, reporting and basic CRUD operations.
- Built python-based data ingestion pipelines, reducing manual data processing time by 75%.
- Developed Plotly dashboards to visualize sales and user metrics.
- Deployed applications on Heroku using Git and maintained uptime with proactive log debugging.
- Integrated NLTK based sentiment classifier into the client dashboard to auto tag customer feedback which provides immediate insights to the marketing teams.

Research Assistant (MIC College of Technology, India) — 08/2019 –05/2021

- Led a team build ML-based fault detection systems using Random Forest and SVM, achieving 90% accuracy and improving the system uptime by 20%.
- Built data preprocessing pipelines to prepare sensor logs for supervised learning. This helped to reduce the model's training time by 30%
- Managed project budgets, component tracking, and submitted technical reports to faculty.

ACADEMIC PROJECTS

Music Genre Classification using CNN & Mel-spectrograms (Capstone Project):

- Used GTZAN dataset and developed preprocessing pipelines in python to manage missing files and balance classes. Converted the audio files to Mel-spectrograms and extracted frequency, time-domain features. Then, we applied log-Mel transformation, gaussian smoothing and edge detection to enrich model inputs.

- Designed and trained a CNN model on raw and feature engineering spectrograms in TensorFlow which achieved 96.5% test accuracy and 57% validation accuracy surpassing standard CNN and Random Forest baseline models.
- Evaluated the model with metrics like accuracy, precision, recall and deployed the CNN model via a Gradio web interface for real-time predictions. Prepared and presented detailed performance reports and visualizations of the model.

Automated Essay Grading System:

- Built a pipeline to extract features from 1800+ essays by identifying rubric based patterns like causal phrases, transitional phrases and core linguistic metrics like word count, sentence count, passive voice counts etc.
- Combined extracted features with human assigned Domain 1 scores and split the dataset into 80/20 to train and test the model effectively.
- Used OLS regression analyses to identify which features had the biggest impact on the scores ($p < 0.05$. This process gave us an idea on how the model made decisions.
- Created a demo using Gradio to grade essays in real time. Finally, prepared an excel report comparing the model's results with human grading.

Sentiment Analysis

- Led a team to develop a real time sentiment classification model which categorizes the text into positive, negative, and neutral classes using SVM, Naive Bayes, and MutlinomialNB algorithms.
- Improved the model's accuracy from 71% to 86% through hyperparameter tuning and feature elimination techniques.
- Integrated insights into dashboards to enhance marketing feedback systems.

COURSE WORK

Machine Learning, Deep Learning, Big data, Data Science, Data Mining, Data Modelling, Software Development for AI, Natural Language Processing, Feature Engineering, Embedded Systems, Empirical Analysis, Computer Vision, Statistical Learning, Cloud Computing Fundamentals, AWS Cloud Architecture, Computer Networks, Data Structures & Algorithms, SQL, Python, Statistical Learning.

AREA OF INTERESTS

- Cloud Computing & Infrastructure
- Natural Language Processing and Transformer Models
- Machine & Deep Learning
- Generative AI
- Computer Vision & Image Processing
- Large Language Models

CERTIFICATIONS

- Internet Of Things (IOT) Workshop by IIT Hyderabad
- Build Box Game Development Workshop by APSSDC
- Coursera: Deep Learning Specialization by Andrew Ng
- Prompt Design in Vertex AI Skill from Google