

VENKATA SAI ROHITH ANDANALA

FULL-STACK DEVELOPER | GEN AI ENGINEER



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SUMMARY

Innovative and self-driven AI/ML Engineer, Data Scientist, and Full-Stack Developer with a strong foundation in machine learning, deep learning, and data analysis. Experienced in designing and deploying AI models, including GANs, LSTMs, and NLP-based solutions, alongside full-stack applications using React.js, FastAPI, and cloud services like AWS.

AREAS OF EXPERTISE

Artificial and Machine learning skills: Deep Learning, Generative Adversarial Network (GANs), Large Language Models (LLM), Reinforcement Learning, Artificial Intelligence, Prompt Engineering

Analytical Skills: Applied Statistics, Data Governance, Power BI, MATLAB, TFIDF, Natural Language Processing (NLP).

Full Stack Development: AWS EC2, NodeJS, Fast API, React js, Android Application Development, Arduino, MySQL Workbench, Form VB, Kafka.

Database Management: MariaDB, MongoDB, DynamoDB

Programming languages: Python, Structured Query Language (SQL), R, C++, JAVA, Java Script, Windows Interface.

PROFESSIONAL EXPERIENCE

Research Assistant, Mahatma Gandhi Institute of Technology

Hyderabad, India

January 2022 – August 2022

Under guidance of: Dr. Phaniraj Madakashira

Responsibilities:

- Collected and analyzed data from research papers for AI modeling.
- Preprocessed and cleaned data to ensure accuracy and consistency.
- Developed and tested AI models for predicting metallic properties.
- Evaluated and optimized model performance for improved accuracy.

Achievements:

- Successfully predicted metallic properties using Artificial Intelligence
- Modelled an AI model proficient in forecasting the mechanical properties of low-density austenitic steel leveraging their compositions and cut the research cost by 80%.
- Meticulously sourced and curated a dataset from more than 115 research papers.
- Conducted a thorough selection process comparing outcomes from various neural networks, determining Catboost as the most optimal choice for the project.

Full-Stack Developer, Starteryou

Newhaven, Connecticut, USA

February 2024 – October 2024

Responsibilities:

- Designed and implemented a dynamic frontend using React.js and TypeScript.
- Developed and optimized backend services using FastAPI and Python.
- Deployed and maintained the application on AWS for scalability and reliability.
- Designed efficient MongoDB schemas for structured and optimized data storage.
- Worked closely with cross-functional teams to align development with business objectives.
- Ensured seamless integration between frontend, backend, and database components.

Achievements:

- Developed a React.js frontend with TypeScript, ensuring a seamless and responsive user experience.
- Built and optimized FastAPI-based backend services in Python for high-performance APIs.
- Deployed the application on AWS, leveraging cloud infrastructure for scalability and reliability.
- Integrated MongoDB as the database solution, designing efficient schemas for data management.
- Collaborated with cross-functional teams to deliver a full-stack solution aligning with business needs.

PROJECTS

Handwritten Digit Generator using GAN

Sacred Heart University

Technologies: Python, TensorFlow/Keras, MNIST Dataset, NumPy, Matplotlib, GeForce RTX 4060 (8GB GPU)

Model Architecture: Discriminator: 1.5M+ parameters, Generator: 1M parameters, Total: 2.4M parameters

Training: MNIST dataset (60,000 images, 28x28 size), learning rate: 0.002, 50,000 epochs

Result: Initial loss: 0.6 for both, Final loss: 0.6 (discriminator) and 2.1 (generator) with significant image quality improvement

- Developed a Generative Adversarial Network (GAN) to generate handwritten digits from random noise inputs, using the MNIST dataset. ([medium link](#))

LSTM-Based Recurrent Neural Network for Predicting Google Stock Prices

Mahatma Gandhi institute of technology

Technologies: Python, TensorFlow/Keras, NumPy, Pandas, Matplotlib for data visualization

Input and Output: Used 60 consecutive timestamps of Google stock values as input to predict the 61st timestamp's stock price.

Model Architecture: The network consists of four LSTM layers with 50 units each, followed by a Dropout layer for regularization, and a Dense output layer. Total parameters: 71,051.

- Training:** Trained the model using the Adam optimizer with a mean squared error loss function for 100 epochs and a batch size of 32. The model was trained on 1275 total timestamps, achieving a final loss of 0.0015.
- Developed a sequential RNN with Long Short-Term Memory (LSTM) layers to predict stock prices based on historical data.
 - The model achieved a final training loss of 0.0015, accurately predicting the 61st timestamp of Google stock prices. ([git link](#))

Personal Ecosystem

Sacred Heart University

Technologies: Raspberry Pi, MySQL, FastAPI (Python), React.js, TensorFlow, Uvicorn
Backend: FastAPI-built APIs, MySQL database, hosted on Uvicorn, deployed on localhost
Frontend: React.js interface with interactive design

- Developed a full-stack project on Raspberry Pi using MySQL, FastAPI, and React.js, deployed using Uvicorn on localhost, demonstrating expertise in backend development, front-end design, and AI-driven solutions.

Sentiment Analysis Using Lexicon-Based Approach

Sacred Heart University

Technologies: Python, Pandas, NLTK (Opinion Lexicon), Lexicon-based sentiment analysis
Input: Customer review text data in JSON format
Output: Sentiment scores for each review and aggregated mean sentiment score by product rating

- Developed a sentiment analysis model using the Bing Liu Opinion Lexicon to classify customer reviews as positive or negative.
- The model processed reviews, tokenized text, and calculated sentiment scores based on predefined positive and negative word dictionaries.
- The final sentiment scores were aggregated and analyzed against overall product ratings. ([git link](#))

EDUCATION

Master of Science in Data Science

Sacred Heart University
Fairfield, Connecticut, United States of America
2023-2024

Bachelor’s of Technology in Metallurgical and Materials Engineering

Mahatma Gandhi Institute of Technology
Hyderabad, Telangana, India
2019-2022

CERTIFICATIONS

- Deep Learning A-Z™: Hands-On Artificial Neural Networks - Udemy
- Generative AI: The evolution of Thoughtful Online Search – LinkedIn
- Learning Microsoft 365 Copilot – LinkedIn
- Streamlining your work with Microsoft copilot - LinkedIn