

POOJITH MENDEM

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EDUCATION

Aug 2023 – Aug 2025

Michigan Technological University, Houghton, Michigan

(MS IN DATA SCIENCE) GPA-3.5

PROFESSIONAL EXPERIENCE

Data Science Intern, Technex (Virtual Internship)

Aug – Sep 2022

- As a Data Science intern at Technex, I explored various tools and techniques to derive insights from datasets and predict feature outcomes.
- I worked on a project determining credit card eligibility using financial and behavioral data. This experience enhanced my skills in predictive modeling and decision-making in financial services.
- The internship provided valuable exposure to applying data science in real-world financial applications.

AI & ML Bootcamp

May – July 2021

- During the AI/ML bootcamp, I gained valuable insights into key concepts such as artificial intelligence, transfer learning, and natural language processing.
- I also explored image classification techniques and both supervised and unsupervised learning methods.
- I applied these techniques to real-world datasets to develop predictive models.

Project Experience

Retrieval Augmented Generation:

- I used the Gemma 2B model and FAISS in the Retrieval Augmented Generation project to store vector representations of data.
- The model retrieves and generates answers using vector embeddings based on relevant questions.
- Key steps involved data ingestion and transformation for proper processing.
- I integrated the model with the FAISS vector database to efficiently retrieve and generate accurate responses.

Next Word Prediction

- I developed a model to predict the next word in a sentence using an LSTM network.
- The LSTM architecture was selected for its ability to capture long-term dependencies in text.
- The model was trained on a large text corpus to learn the context effectively.
- It suggests the most likely next word in a sentence based on the learned context.

Language Translation:

- I used the Llama 3 model and implemented Langchain for effective querying by connecting system and human messages.
- I utilized langchain_core.message to streamline communication between system and users.
- The langchain_core.output_parser was employed to ensure clear and structured output.
- This approach enhanced the overall translation process and improved user experience.

Text summarization:

- I used the Gemma model for text summarization, designed for efficient text analysis.
- It was fine-tuned on a large corpus to identify key sentences and generate summaries.
- The model utilizes transformer-based architecture to capture context and meaning.
- It produces concise, accurate, and human-like summaries with high relevance.

Skills

Python libraries: Pandas, Numpy, Matplotlib, Seaborn, Scikit-Learn, Scipy, Plotly, Scikit-Learn, XGBoost.

Data Analysis: Data Wrangling, Feature Extraction, Feature Engineering, EDA, Data Visualization.

Machine Learning: Regression, Classification, Clustering, Model Selection, Evaluation, Hyperparameter Tuning, Deployment, Monitoring and maintenance.

Text classification: Data Collection, Text preprocessing, Syntactic Analysis, Semantic Analysis, Language modeling, Model Building, RNN.

Image classification: Data Preprocessing, Automatic Feature Extraction, Deep learning modeling, Model Evaluation, CNN

GenAI: GPT, BERT, LLaMA, Gemma, Pretraining, Fine-tuning, Prompt Engineering, Transfer Learning