Saikiranmansa Sunnam

Machine Learning Engineer | Data Scientist

ssaikiranmansa2023@gmail.com 7164150744 Buffalo Linkedin Hugging Face

EDUCATION

State University of New York at Buffalo, 12/2024 | Buffalo, NY
Master of Science in Computer Science
Courses: Machine learning, Deep learning, Comp Vision & Image Proc, Operating Systems, Algorithms Analysis and Design, Data Intensive Computing, Computer Security, Data Mining and Query Language

GRIET, *Bachelor of Engineering in Computer science.* 08/2018 – 07/2022 | Hyderabad, Telangana
Courses: Statistics, Java, Machine learning, Data structures, Mathematics, Intro to Python, DBMS, Operating systems, Computer networks, Big Data Analytics.

PROJECTS

Domain-Specific QA System Using DeepSeek and RAG

- Built a question-answering system by integrating **DeepSeek** with a **Retrieval-Augmented Generation (RAG)** framework, combining dense retrieval (FAISS) and contextual generation for accurate, domain-specific responses.
- Fine-tuned **DeepSeek** on custom QA datasets and indexed 1M+ domain-specific documents using **FAISS** and **Elasticsearch** for efficient retrieval.
- Optimized the RAG pipeline by experimenting with embedding models (e.g., Sentence-BERT) and fine-tuning retrieval/generation components for improved relevance.
- Evaluated system performance using **BLEU**, **ROUGE**, and **Exact Match**, achieving a **30% improvement in accuracy** over baseline models.
- Deployed the system as a scalable **REST API** using **FastAPI** and **Docker**, hosted on **AWS**, reducing domain experts' information retrieval time by **50%**.

Advanced Anomaly Detection and Text Classification Using Deep Learning

- **Developed an Anomaly Detection System using Autoencoders**: Designed and implemented three autoencoder models to detect anomalies in a time-series dataset with 5,315 entries, achieving a validation R^2 score of up to 0.9916 and identifying 25-74 anomalies across models.
- **Built and Fine-Tuned Transformer Models for Text Classification**: Constructed a transformer-based model using PyTorch for the AG News dataset, achieving 90.08% accuracy, and improved performance to 90.53% with L2 regularization and dropout techniques.
- **Preprocessed and Visualized Data**: Cleaned, tokenized, and normalized datasets, and created visualizations (histograms, bar plots, scatter plots) to analyze data distributions and model performance.
- **Optimized Model Performance**: Applied optimization techniques like L2 regularization, dropout, and learning rate tuning to reduce overfitting and improve model accuracy by 0.45%.
- **Evaluated Models using Metrics**: Conducted extensive evaluation using metrics like R^2 score, precision, recall, F1-score, and confusion matrices, and visualized results through ROC curves and loss/accuracy graphs.

PROFESSIONAL EXPERIENCE

Front-end Intern, *Rivach LLP* 05/2022 – 03/2023 | India

- Leveraged data-driven insights to refine front-end designs, boosting user engagement and retention.
- Translated analytics findings into actionable UI enhancements, collaborating closely with cross-functional teams.
- Developed responsive interfaces using HTML, CSS, JavaScript, and React, informed by performance metrics and user feedback.
- Optimized user journeys through iterative design improvements, resulting in higher conversion and client satisfaction.
- Participated in high-profile projects, using data analysis to pinpoint friction points and drive targeted solutions.

SKILLS

Languages: Python, R, SQL, Java, C
MachineLearning: Regression, Classification, Clustering, DeepLearning
Tools: Pandas, NumPy, ScikitLearn, TensorFlow, PyTorch, Keras, Matplotlib,Seaborn, Plotly, Tableau
Databases: MySQL, PostgreSQL, Hadoop, Spark
DevOps & Cloud: Docker, Jenkins, REST APIs, AWS
Design: AR & VR, 3D Modelling, UX/UI Design
Skills: Data Collection, Cleaning, Analysis, Reporting, Dashboards, Collaboration, DataRequirements, AdHocAnalysis, DataQuality, Documentation, CICD, Git, Jupyter Notebook

PUBLICATIONS

Granite classification using machine learning and edge computing