Chirayu Tripathi

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EDUCATION

University of Florida   Gainesville, FL, USA
Master of Science in Computer Science. GPA: 3.8   Aug 2022 - May 2024

Medi-Caps University   Indore, MP, India
Bachelor of Technology in Computer Science. GPA: 3.8   Aug 2017 - May 2021

SKILLS

Technical Skills: Deep Learning, RPA, Statistics, Linux, DBMS, Algorithms, Data Visualization, MLOps, NLP, LLM.
Programming Languages & Databases: Python, C/C++, R, Erlang, MySQL, MongoDB, Neo4j.
Frameworks and Applications: Hadoop, Tableau, Numpy, Pandas, Matplotlib, Scikit-learn, PyTorch, Tensorflow, Langchain, Git, AWS, Flask, REST API, Apache Spark, SAS, ETL, Docker, Kubernetes.

WORK EXPERIENCE

Machine Learning Researcher (RA)   Nov 2022 – Present
UF Health, PRISMAp Lab   Gainesville, FL, USA

- Engineered predictive methodologies for arteriovenous fistula surgeries, employing time-series modeling techniques, to increase cost savings through the reduction of expensive scan procedures, validated by an impressive $R2$ score of 0.75.
- Modeled graph neural networks to perform the drug repurposing, overcoming the complexity of analyzing the interaction between genes, disease, and drugs, achieving an 83% ROC-AUC score for graph link prediction.
- Leveraged the Fairness (AIF-360) and Interpretability (SHAP) libraries to address racial bias and lack of explainability in medical models, resulting in improved fairness and unveiling the factors influencing potential underlying conditions.
- Employed a transformer (GatorTron) to extract social determinants of health (SDoH) from clinical notes, addressing the lack of SDoH data and resulting in a 4% AUROC increase for mechanical ventilation complication prediction.

Machine Learning Engineer   Jun 2021 – Jul 2022
ZkAGI (formerly Bitbaza.io)   Chennai, TN, India

- Drove a pivotal initiative by deploying a Deep Neural Network (DNN) on AWS to classify prospective customers from client lists, significantly accelerating the identification of high-potential clients and slashing time by nearly 50%.
- Led the real-time 'Social Listener' project to identify potential clients on social media using LLM and Kafka. Overcame the inefficiency of manual social media searches, resulting in a streamlined process and onboarding of 2 new clients.
- Innovated a business intelligence feature leveraging AI with past sales data, addressing the challenge of forecasting future trends and identifying potential sectors to target, and resulting in up to 10% sales growth for customers.

Machine Learning Engineer Intern   Jan 2021 – May 2021
ZkAGI (formerly Bitbaza.io)   Chennai, TN, India

- Employed GPT-3 for personalizing cold emails, addressing the challenge of low engagement and boosting open rates by 20%, response rates by 4%, and client conversion rates by 2%; subsequently deployed T5 transformer on AWS as a cost-effective REST API, replacing GPT-3 with 15% cost reduction while maintaining GPT-3 level efficiency.

PROJECTS

nl2query: Convert Text to Database Queries | Tech Stack: Text Generation, CodeT5+, Phi-2. LINK   Apr 2024

- Engineered a framework to translate natural language texts into queries for the Pandas, MongoDB, Kusto, and Neo4j databases, enabling search across data sources using English, eliminating the need of specialized database languages.

VerAIzon | Tech Stack: Retrieval Augmented Generation, LLM, Langchain. LINK   Oct 2023

- Modeled a RAG customer service chatbot for Verizon, integrating the Mistral-7B and MiniLM-L12 models to process over 1000-page FAQs and user guide documents, addressing the time-consuming manual process of reading documents.

Latent Factor based Recommender System using Spark ALS | Tech Stack: Spark.   Dec 2021

- Implemented the popularity based recommender using a latent factor model with ALS to decrease root mean square error by 15% . Mitigated the cold start problem for a new user by using additional metadata like tags.

ACHIEVEMENTS

- Co-authored the paper "Transparent AI: Developing an Explainable Interface for Predicting Postoperative Complications". LINK
- Ranked 10th globally out of 2500 participants in the "Love in the time of screens" Machine Learning hackathon organized by the HackerEarth, which involved matching dating candidates based on user profiles.
- Contributed to the open source by implementing CodeT 5 support for the SimpleT5 library. LINK
- Deployed a PyPI library for the nl2query project, garnering over 5000 downloads and 47 stars on GitHub.