Parth Jain

Software Engineer Specializing in AI and Data Science Solutions

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EXPERIENCE

AI Engineer (Generative AI) Intern | **Foundational AI** | DE, USA (Remote)　　　　　　　　Oct 2023 - Present
- Designed platform architecture using Azure Cloud to automate business operations with customizable GenAI tools.
- Executed advanced prompting and retrieval techniques with langchain, for better LLM output with 40% reduced cost.
- Built FastAPI-based server side logic for no-code RAG building across many use cases for 5x user productivity.
- Fine-tuned and deployed ML model with Azure ML to categorize user queries, providing customer sales cycle status.
- Performed hyper-parameter tuning for the Intent model using Optuna, SetFIT, and PyTorch to boost accuracy by 10%.

Data Science Research Assistant | **RUCI lab** | NJ, USA　　　　　　　　　　　　　　　　Aug 2022 - Sept 2023
- Developed deep learning framework, boosting accuracy up to 10% for user-specific handwritten OCR applications.
- Built ETL pipelines and scraped data, to ensure high-quality data for machine learning and data analysis application.
- Conducted research on NLP topics i.e. machine translation and sentiment analysis to report findings in white papers.
- Utilized Python for data analysis and visualization on text and finance data, to deliver key insights for client queries.
- Designed Jupyter labs to give a hands-on approach to AI, for Prof. Jim Samuel's course, increasing enrollment by 50%.

Data Science (R&D) intern | **WINLAB** | NJ, USA　　　　　　　　　　　　　　　　　　June 2022 - Aug 2022
- Collaborated with engineers to build IoT-ML system to identify users with motion patterns, for safe use of medicines.
- Developed data pipeline to fetch data over MQTT protocol and load to S3 with Python cutting process time by 16%.
- Extracted features from time series data and tuned random forest model with sk-learn achieving accuracy of 91%.

Software Engineer(Data) Intern | **Mahavir Coconut Industries** | KA, India　　　　　Dec 2020 - Feb 2021
- Built e-commerce website using Django and React for major coconut oil producer, increasing sales by $50K annually.
- Optimized database performance by analyzing and tuning SQL queries, improving query response times by 15%.
- Built dashboard with Tableau and Excel for inventory management, to mitigate bottlenecks and reduce losses.

PROJECTS

The Culinary Theory ↺ [Repository]
- Deployed recipe blogging website featuring intuitive interface with AWS, attracting 100+ users to share recipes.
- Coded and tested 20+ REST APIs with Jest and Node.js to boost platform functionality, increasing new users by 20%.
- Trained and integrated transformer model achieving 0.9 recall, enabling users to generate recipes from food images.
- Built model coupling vision transformer and BERT to identify ingredients in images with 86% accuracy with Pytorch.

Trading Co-Pilot[Repository]
- Developed a financial query engine following response action framework backed by Retrieval-Augmented Generation, enhancing query comprehension and financial insight accuracy through GPT-3.5 and AstraDB.
- Fine-tunned BERT for sentiment analysis of financial texts, improving stock market predictions and trading strategies.

Text Generation using CONT ↺
- Reproduced results of CONT and accomplished 35% increase in common-sense generation and 10% increase in text summarization for ROUGE-L, utilizing CoNT and T5 transformer, surpassing Naive-CL with PyTorch.
- Reduced GPU time and cost by 30%, leveraging Transfer learning and by optimizing hyper-parameters.

EDUCATION

Rutgers University - New Brunswick　　　　　　　　　　　　　　　　　　　　　　　　Sept 2021 - May 2023
Master of Science: Computer Science　　　　　　　　　　　　　　　　　　　　　　　　GPA: 3.96/4.00
Courses: Advanced Machine Learning, Massive data mining, NLP, AI, Data Structures, Algorithms, Software Engineering.

University of Mumbai　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Aug 2017 - June 2021
Bachelor's of Engineering: Computer Engineering　　　　　　　　　　　　　　　　　　GPA: 8.37/10.00

SKILLS

- **Languages**:　　Python, SQL, FastAPI, prompt engineering, Javascript, Java Node.js, HTML, CSS.
- **Tools**:　　　　NumPy, scikit-learn, TensorFlow, PyTorch, Matplotlib, Pandas, PyTest Plotly, Langchain.
- **Technologies**:　Git, Tableau, Looker, AWS (S3, Lambda), Azure Cloud ML, GCP, Docker, Postman, Postgres, MongoDB.

PUBLICATIONS (Google Scholar)
- Radar Based User Discrimination System for Medication Adherence Monitoring, IPSN, ACM, 2023 [PDF].(WINLAB)
- Adaptive Framework for Numerical Digits Recognition with OCR Methods, MDPI, 2023 [PDF] (RUCI lab).