Anirudh Iyengar Kaniyar Narayana Iyengar

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Experience

Machine Learning Engineer Intern   June 2024 - December 2024
Synapse Labs Inc

- Designed an end-to-end **ETL pipeline** for automated payment reconciliation, reduced **manual time by 70%**; Utilized **Amazon Textract** for OCR to extract and convert on-prem unstructured data into structured JSON formats.
- Developed and deployed **Decision Trees** and **Random Forest** models for classification of entity resolution and payment invoice matching; implemented feature extraction with **graph clustering**, **fuzzy matching**, and **blocking** .
- Built scalable real-time data pipelines using **AWS SQS, Lambda, Docker and Sagemaker** for containerized workflow orchestration; stored, indexed processed data in **DynamoDB tables** for efficient retrieval and historical data tracking.
- Achieved an **80% increase** in the matching record classification with **transfer learning model**; Designed **QuickSight** dashboards to integrate ML-driven Strategic insights and **KPIs** for faster workflow and cross-functional collaboration.
- Managed **Git** repositories for version control, documented in **Confluence**, facilitated knowledge transfer and Jira for task management; **automated IAC's and CI/CD**, orchestrating services like **IAM, S3 and CloudWatch.**

Deep Learning Research Aide   July 2023 - June 2024
ASU College of Health Solutions

- Collaborated with Valleywise Health on multi-task and multi-modal learning for 2D chest X-ray regression analysis, segmentation, and localization using **Deep Neural Networks, CNNs, and Transformers in PyTorch**.
- Leveraged **NLP models** like **GPT-4** and **LLaMA** with fine-tuned embeddings for medical report using **MIMIC-IV large scale dataset** for query classification, improving **5%** performance and benchmarking over baseline models.
- Conducted **hypothesis testing** and reported **Power BI** dashboards to evaluate metrics between different models

Data Scientist   January 2021 – December 2022
HIB

- Processed and labeled **150,000 handwritten bills**, using OCR techniques to convert daily records into a structured format; Managed datasets using **Python, SQL, and Pyspark** to refine and extract key information.
- Applied regression and statistical analysis to identify daily product trends and generate weekly reports, resulting in a **15% revenue growth** and a **10% increase in customer satisfaction** through targeted insights.
- Implemented **classification algorithms** to segment customer purchasing behavior and utilized **forecasting models** for demand prediction, led to **personalized marketing strategies** and a **7% boost in repeat customers**.
- Designed **Tableau interactive dashboards** to track and visualize sales trends, **reducing analysis time by 10%.**

Projects

AI Database Query Assistant [*LLM, NoSQL, Transformers, PyTorch*]   **Present**
- Developed a chat assistant for querying **NoSQL and SQL databases** with natural language, leveraging **Llama 3, Gemma 2**, and **RAG** to improve accuracy by 15%, deployed app via **Streamlit, HTML, CSS**.

Integration of RAG with Open Source LLM and LangChain [*RAG, LLMs, Quadrant, LangChain*]   **Present**
- Streamlined data preparation by cleaning 50 DL papers, enhancing accuracy by 2% with **Qdrant**, **BGE-large-en-v1** embeddings, and **LangChain with LLM (BERT)** for **Q&A and research summary generation**.

Mapping Accident Trends and Patterns in Maryland [*D3.js, Javascript, HTML5, CSS3/SCSS*]   **December 2024**
- Applied **geospatial analytics** to visualize accident trends in Maryland, using interactive maps and geographic data for **The PacificVis Storytelling Contest**, with enhanced interactivity through scroll effects, hover actions, and tooltips.

Technical Skills

Languages: Python, C, C++, SQL, HTML, MATLAB, Bash, R, CSS, JavaScript, D3.js.
Frameworks: PyTorch, SciPy, PySpark, Scikit-Learn, OpenCV, NumPy, Pandas, Huggingface, Matplotlib, Seaborn, JIRA, TensorFlow, Transformers, Jupyter, Detectron2, OpenAI API, Confluence, Dask.
Tools/Platforms: Tableau, NLTK, Jira, Snowflake, AWS QuickSight, MySQL, SageMaker, AWS S3, SQS, Lambda, SQL Server Management Studio, Visual Studio Code, Jupyter, Git, Visual Studio Code, Docker, MLFlow.

Education

MS in Robotics and Autonomous Systems - Artificial Intelligence   January 2023 - December 2024
Arizona State University   *Tempe, AZ*

B.Tech in Computer Science and Engineering   August 2016 – May 2020
Dayananda Sagar University, India   *Bengaluru, KA*