Anirudh Iyengar Kaniyar Narayana Iyengar

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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*

Experience

Backend Engineer - ML Infrastructure Intern **January 2025 − Present**
Local Grown Salads

- Establishing API endpoints using **FastAPI** for IoT device state and sensor data management in a **PostgreSQL database on AWS** and deploying **Docker containers** for cross-system consistency and scalability.

Machine Learning Engineer Intern **June 2024 − December 2024**
Axyo (Synapse Labs Inc)

- Created an end-to-end **ETL pipeline** for automated payment reconciliation, decreased **manual time by 70%**; Leveraged **Amazon Textract** for OCR to extract and convert unstructured data into structured JSON formats.
- Implemented entity resolution and invoice-matching models using **Decision Trees** and **Random Forest**; Increased classification accuracy from **60% to 80%** via **transfer learning**, boosting matching reliability by 20%.
- Employed **graph-based clustering, TF-IDF similarity scoring, and fuzzy matching** for feature engineering, enhancing deduplication and reducing false positives by **30%**; Built **QuickSight** dashboards and **KPIs**.
- Developed scalable real-time data pipelines using **AWS SQS, Lambda, Docker, and SageMaker**; deployed models via **SageMaker Endpoints** and indexed processed data in **DynamoDB** for fast retrieval and historical tracking.

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

- Collaborated with Valleywise Health on multi-task learning for 2D chest X-ray regression, segmentation, and localization through **Deep Neural Networks, CNNs, and Transformers in PyTorch**, improving accuracy and efficiency.
- Fine-tuned **NLP models** (**GPT-4**, **CLIP**, **RAM++**) on electronic healthcare reports from the **MIMIC-IV dataset** for query classification, boosting performance by **5%**, and presented model benchmarks with **Power BI** dashboards.

Data Scientist **January 2021 − December 2022**
HIB

- Initiated an OCR-based pipeline using **PyTesseract** to digitize 150,000 handwritten bills, minimized manual data entry time by 40%; utilized **Python, SQL, and Pandas** for data preprocessing, entity resolution, and key-value extraction.
- Applied **XGBoost** and **Random Forest** regression models to identify daily product trends, refining pricing strategies and generating weekly reports, achieved **15% revenue growth** and a **10% increase in customer satisfaction**.
- Programmed a customer segmentation model using **K-Means clustering**, identifying high-value customer groups and amplifying marketing campaigns, leading to a **7% increase in repeat purchases** and improved campaign ROI.
- Designed **Tableau** interactive dashboards to track and visualize sales trends, reducing **weekly analysis time by 10%.**

Projects

AI Database Query Assistant [*LLM, NoSQL, Transformers, PyTorch*] **Present**
- Executed 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**.

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**
- Integrated **geospatial analytics** to visualize accident trends in Maryland, using geographic data for **The PacificVis Storytelling Contest**, with enhanced interactivity through scroll effects, hover actions, and tooltips.

Technical Skills

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