




Anirudh Iyengar Kaniyar Narayana Iyengar

 [linkedin.com/in/anirudhiyengar-kn](https://www.linkedin.com/in/anirudhiyengar-kn)  [anirudh6415](https://github.com/anirudh6415)  akaniyar@asu.edu [Portfolio](#)

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 unstructured data into structured JSON formats.
- Developed and deployed **Decision Tree** models and **Amazon Comprehend** 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 **AWS ECS** 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 **Bitbucket** repositories for version control, documented in **Confluence**, facilitated knowledge transfer and Jira for task management; **automated IAC's** with **Terraform**, orchestrating services like **IAM**, **S3** and **CloudWatch**.

Deep Learning Research Aide

July 2023 - June 2024

ASU College of Health Solutions, JLiAng Lab

- Leveraged **Gen AI models** like **GPT-4**, **CLIP**, **Tag2Text**, and **RAM++** with fine-tuned embeddings for medical report classification, image captioning, QA, and retrieval, using **PyTorch**, **Hugging Face**, **Transformers**, and **NLTK**, applying **Transfer Learning** and **Zero-shot Learning**, improving performance by **5%** over baseline models.
- Reported using **Power BI** dashboards and **Matplotlib** visualizations to evaluate metrics and model performance.

Data Scientist (Data Analyst)

January 2021 – December 2022

Hassan Iyengar's Bakery

- Processed and labeled **540,000 handwritten bills** over three years, 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, time series, and statistical analysis to identify daily product trends and generate weekly reports, resulting in a **25% revenue growth** and a **15% 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 **10% boost in repeat customers**.
- Digitalized inventory management by centralizing stock records, order frequency, and restocking needs, enabling real-time tracking with **MySQL**, **reducing discrepancies by 30%**, and streamlining supply chain efficiency.
- Designed **Tableau interactive dashboards** to track and visualize sales trends, **reducing analysis time by 40%**.

Projects

Digital Experience Assistant [*OpenAI GPT, NoSQL, Transformers, PyTorch*]

Present

- Developed a chat assistant for querying **Couchbase NoSQL** and **SQL databases** with natural language, leveraging **GPT-4**, **Llama 3**, **Gemma 2**, and **RAG** to improve accuracy by 35%, 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, Kubernetes, SciPy, PySpark, Scikit-Learn, OpenCV, MMDetection, NumPy, Pandas, Huggingface, Matplotlib, Seaborn, TensorFlow, Transformers, Jupyter, Detectron2, OpenAI API, SDLC, JIRA, Confluence, Dask.

Tools/Platforms: Databricks, Tableau, ClearML, NLTK, Jira, Jenkins, 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