Anish Panicker

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Skills

- **Languages**: Python, SQL, R Programing, C++, Javascript, Java
- **Cloud, Systems**: AWS (Athena, Bedrock, S3, RDS, EC2, Lambda, SageMaker, Kubernetes), Azure (Databricks, Datalake, Synapse)
- **Databases**: MySQL, MongoDB, Vector DB
- **Libraries, Tools**: Keras, PyTorch, TensorFlow, Hugging Face Transformers, OpenCV, Streamlit, Scikit-learn, LangChain, CUDA
- **Developer Tools**: VS Code, AWS QuickSight, Apache Airflow, Jupyter Notebook, Power BI, Tableau, Matlab
- **Technologies**: Hadoop, Snowflake, Talend, Docker, Big Data Pipelines (ETL workflows, data ingestion, real-time stream processing, batch processing)
- **Data Science Techniques**: KYC/KYB, Feature Engineering, MLOps, CI/CD pipelines

Experience

New Jersey Courts | *Machine Learning Engineer Intern*   **Feb 2025 - Present**
- **Fine-tune LayoutLM** for guardianship fraud detection using a **custom-annotated court document dataset** to extract data and flag fraud, targeting **$10M+ in loss prevention** while ensuring ethical handling of sensitive case information.
- Implement scalable **MLOps pipelines** using **AWS, RDS, and MLflow** to streamline model inference, **integrate CI/CD**, and support deployment of models capable of processing over **50K records monthly**.
- Design and maintain a containerized fraud dashboard (**ReactJS, MongoDB, Tableau**) to **visualize fraud trends**, **case activity**, and **file uploads**.

Pittsburgh Technologies | *Machine Learning Engineer*   **Sep 2022 - Jun 2023**
- Conducted in-depth research on **AML algorithms to enhance credit card fraud detection**, integrating advanced machine learning models into the Nastel Xray platform and leveraging familiarity with **KYC/KYB best practices**.
- Integrated **anomaly detection models into Nastel Xray** and ensured data integrity in processing sensitive, regulated data; **decreased false positives by 15%** and **improved fraud detection accuracy by 22%.**
- Built **dynamic visual dashboards** to analyze large datasets and track fraud patterns, **enabling faster fraud triage across 150K+ transactions. Integrated anomaly detection models into Nastel Xray**

Emagia | *Software Engineer Intern*   **Jul 2022 - Sep 2022**
- Deployed an ML-based pipeline to automate email data extraction using **NLP, NER, and OCR**, cutting manual entry and **standardizing 95% of outputs into structured tables.**
- Contributed to **front-end architecture and development** of an online donation based platform (TalGiving) raising $200K+ in donations.

Projects

AI Agents for Code Generation (**ReAct Agent Model, Mistral, CodeLlama, RAG, Python**)   **Mar 2025**
- Designed a multi-agent system using ReAct with Mistral and CodeLlama, achieving 91.7% code accuracy and 25% better retrieval via a llama_index-based vector pipeline.
- Created **AI agent tools** for **API doc retrieval**, code reading, and file naming suggestions, integrating **Pydantic-Flask post-processing** to validate and structure JSON.

Medical Image classification (**MLflow, DVC, Docker, TensorFlow, CI/CD Pipeline**)   **Feb 2025**
- Applied VGG16 **transfer learning** on 12,000+ CT scans to classify images into four categories with **90% accuracy**, enabling effective medical image interpretation.
- Configured scalable **deployment on AWS** using **Docker** and **MLflow**, and designed a **CI/CD pipeline** with **DVC** and **Flask** API to automate data versioning and support real-time inference with **A/B testing** of model metrics.

AI Tutor (**Langchain, Cosmos DB, LLMs, RAG, Python, NLP**)   **Oct 2024 - Nov 2024**
- Built an AI tutor ("Sir Learnsworth") using **GPT-4** for Q&A and **T5/LLaMA** for quiz generation, improving relevance by 20% via **RAG-based multi-format document ingestion**.
- Deployed secure login with **Azure Cosmos DB**, ensuring 100% reliability in multi-user tests and **sub-200ms query response times**.

Multi-agent Customer Support Bot (**AI Agents, Langflow, Streamlit**)   **Oct 2024**
- Developed a Streamlit-based customer support chatbot using **Langflow API** with real-time responses from structured data (Csv, JSON, Pdf). Created **3 custom tools for agent interaction** and modular deployment.

Certifications

- AWS Certified AI Practitioner
- Google Data Analytics Specialization
- Bloomberg Market Concepts
- IBM Developer Skills Network

Education

New Jersey Institute of Technology   **Sep 2023 - May 2025**
Master's, Data Science