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# Raamis Hussain

Senior Data Scientist

## Skills

| | |
|---|---|
| **Languages** | Python, SQL |
| **Tools and Frameworks** | Git, FastAPI, Azure OpenAI, AWS, Azure, PyTorch, Scikit-learn, Hugging Face, Docker, LangChain |
| **Machine Learning & AI** | Supervised learning, NLP, text embedding, regression, classification, LLM, CNN, Fine-tuning, transfer learning |

## Technical Experience

**Senior Lead Data Scientist** **Jun 2023 — Present**
*Majesco*

- Built an Answer Agent using GPT-4o and OpenAI's structured output to perform optical character recognition (OCR) to extract data from complex insurance documents, answer questions, and fill out JSON schemas while citing sources from the original document. Achieved over 70% accuracy on client test set.
- Implemented caching and database layer to Answer Agent application using CosmosDB which reduced latency and cost by an order of magnitude.
- Built a text classifier by fine-tuning BERT and training a LinearSVC model to detect attorney involvement in insurance claims, achieving 97% accuracy, 0.89 precision, and 0.72 recall. The text classification model resulted in early detection of potential litigation in personal auto claims.
- Deployed a GPT-4-powered chatbot application using FastAPI with a custom RAG pipeline using Azure AI Search and CosmosDB to answer questions related to complex insurance forms as well as general Majesco products.
- Built a monitoring pipeline using AWS Lambda and FastAPI which sent requests to production applications every 15 minutes and raised alarms when encountering any errors, enabling rapid error detection and minimizing downtime.

**Data Scientist** **Dec 2021 — Jun 2023**
*Majesco*

- Worked with front-end teams to build production-grade FastAPI microservices, allowing product-teams to integrate LLM features into several Majesco products.
- Trained and deployed ResNet and YOLO models for image classification and object detection tasks respectively. These models were used to identify hazards in property inspection photos, reducing the need for costly manual inspections.
- Deployed and maintained models as containerized microservices hosted on AWS

## Projects

**Lung Cancer Detector**

- Trained an object detection model to detect tumors in CT/PET-CT images as a research project for a Japanese hospital group. The model achieved 82% precision, 75% recall and 80% mean average precision @0.5.
- Gathered public dataset of DICOM images, converted to PNG, and trained a YOLOv5 model.
- Used Modal to deploy a serverless FastAPI application to serve the model
- Built a FastAPI application which used an open source model to classify chest X-rays for lung cancer. Containerized and deployed the application via AWS Lambda.

## Education

**Doctor of Philosophy, Physics**, *University of Wisconsin - Madison* 2016 - 2021
**Bachelor of Science in Physics**, *University of California, Santa Barbara* 2012 - 2016