

Hemani Nainesh Shah

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📁 Work Experience

9Nexus

10/2024 – present

GenAI Developer

- Consulted for Cognizant and GSK
- Built a pipeline to extract substance types (Protein, Nucleic Acid, Chemical) and key details (CAS number, molecular weight, etc.) from PDFs. Used Azure Document Intelligence for text extraction, Azure Search Vector Database for storage, and RAG-based retrieval for accurate data extraction. Implemented reference tracking to display extracted information with source filenames.
- Developed a table extraction pipeline using Azure Document Intelligence, extracting study IDs via RegEx and retrieving corresponding Study Intervention tables from a document database. Filtered relevant tables based on configuration files specifying required attributes, ensuring accurate extraction. Standardized extracted data using RegEx cleaning and merged multi-page tables using primary key configurations. Optimized table display for the UI by structuring non-primary attributes as per requirements.
- Extracted tables from text using Azure Document Intelligence and prompt-based conversion. Enabled multi-language support, including Dutch, by integrating a translation mechanism.
- Developed a dashboard analysing 1.5L+ employee feedback comments (and transcriptions of calls with live agents) to surface hidden issues in Source-to-Pay processes. Helped CXO leadership uncover previously unknown systemic and regional pain points by providing root cause analysis and actionable insights, enabling data-driven decisions. This allowed users to get analysis reports within 4 to 5 minutes, which would have taken around 5 months of manual effort from consultants.

ARThink AI

08/2023 – 07/2024

Data Scientist - Generative AI

- Implemented an end-to-end pipeline for a virtual assistant that went through speech-to-text, RAG and text-to-speech.
- Implemented a pipeline for multilingual speech-to-text in Indian languages and translation into another language.
- Set up a pipeline to finetune Vision Language Model on custom datasets. Used various techniques like quantization and LoRA for optimization.
- Finetuned Llama for a fitness application.
- Created a POC for attendance management using facial recognition with video-to-video comparison, to capture different facial expressions, lighting conditions, and angles for each user.
- Created a chatbot for customer service at an airport, explored structured agents and OpenAI function calling to call various functions that gave information related to various services offered by the airport like parking, bus services, etc. Used various techniques like prompt engineering and RAGs to ensure accurate information was given.
- Developed an automated image processing pipeline for classifying spectacle prescription images and extracting key information. Implemented ROI detection using YOLO to standardize prescription information extraction. Established quality control measures, to ensure the accuracy and reliability of extracted data.

DeetsDigital

02/2023 – 07/2023

Data Science Trainee

- Implemented Super Resolution to enhance the quality of images taken by drones to perform object detection.
- Automated the process of extracting information from invoices (in PDF format) and converted to Excel format the way the client needed.
- Used OCR to extract information from forms containing multiple languages.
- Created POC for sentiment analysis on human facial data using CCTV footage of people waiting in queues.
- Extracted information from resumes using OCR to map them to the most compatible job descriptions using LLMs to map them dynamically.

📁 Projects

EDAA: Emotion Detection And Analysis [🔗](#)

Created a web app that generated a report of audience reactions. We considered video(facial expressions of the audience) and text(context of the speech). The goal of this app was to help public speakers improve their speeches. Read more about it here [🔗](#)

PharmaBot

Created a Bot that calls customers or customers can call and ask questions and their questions will be answered using IBS, ASR, RAG using LLM, text-to-speech and Twilio.

🧠 Skills

Python | DL | Tensorflow | Statistics | SQL | Langchain | LLM | Flask | Streamlit | Computer Vision | Huggingface | Azure AI - Face API | Azure AI - Document Intelligence | Llama | Llava | OpenAI - GPT- 3.5 / 4 | text-to-speech | Whisper | Git and Github | Deepface | OCR | Visual Question Answering | ASR | NER | Spacy | NLTK | FastAPI | Pytorch | OpenAI SDK | Agent | AWS | GCP | LlamaIndex | vectorDB | PineCone | Chroma

🎓 Education

Bachelor of Computer Engineering

2018 – 2022

Gujarat Technological University

9.02/10 - CGPA

Internships, Volunteering and Part time Jobs

Univ.AI

04/2022 - 01/2023

Teaching Assistant

Worked under Faculty from Harvard University to develop coursework for Regression and Classification problems, Model selection techniques, Hypothesis testing, etc. Helped students debug code and understand ML concepts.

Advanced Business & Healthcare Solutions

01/2022 - 06/2022

Quality Analyst Trainee Intern

Created test cases. Learned various tools like Postman, Cypress, Zephyr and Jira.

TEDXGoldenBridge

08/2020 - 06/2021

Content Curator