

# Suyash Maniyar

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## EDUCATION

### University of Massachusetts Amherst

Master of Science in Computer Science

### Indian Institute of Technology, Jodhpur

Bachelor of Technology

Amherst, MA, USA

Sept 2025 – Expected May 2027

Jodhpur, India

Aug 2019 – May 2023

## EXPERIENCE

### Advanced Data Science Associate

ZS Associates

November 2024 – July 2025

Pune, India

- Developed and deployed a **Switch Prediction Model** : to predict the patients switching out from an ongoing drug treatment, leveraging Real-world data using Machine Learning and Deep Learning models and dataiku platform.
- Model and the **SHAP analysis** helped in **optimizing marketing** efforts with projected savings of 500K dollars.
- Worked on the Patient Journey project, building patient cohorts by implementing business rules using SQL.
- Performed **Patient Archotyping** using models like Gaussian Mixture Model, XGBoost, Autoencoder architecture.

### Data Scientist

Decimal Point Analytics

July. 2023 – October 2024

Mumbai, India

- Built a **Predictive Maintenance pipeline** to forecast defects in Industrial machinery using timeseries algorithms
- Mentored two summer interns on the **Knowledge Distillation and Few-shot Object Detection project**.
- Worked on **Retrieval Augmented Generation (RAG)** system to surf documents like PDFs and Excel Sheets to answer queries. The tool reduced an analyst's response time from 1 hour to 4 minutes (**93% improvement**).
- Improved the RAG chatbot by integrating **knowledge graphs** to improve extractive question answering, boosting accuracy by **9%**. Optimized the pipeline using multi-threading to **reduce latency by 75%**.
- Developed an Agentic, hybrid web scraper by **finetuning Llama2 (7B/13B) using LoRA** for text-based extraction and leveraging GPT-4 for code generation pipeline, reducing the downtime from 12 hours to 3 minutes.
- Trained **diffusion models** to generate **fabric design patterns** from text prompts with detailed style attributes.
- Prototyped several Gen-AI based products leveraging closed source and open source LLMs, FastAPI, Django.

### Data Science Intern

Decimal Point Analytics

May 2022 – July 2022

Remote

- Built an end-to-end pipeline to **detect accidents in CCTV footage** and perform car damage segmentation.
- Conducted comprehensive experimentation of diverse architectures such as **ViT, Convolutional LSTM models, YOLO**, and computer vision algorithms like **DeepSORT, Opticalflow**. Achieved an **F1 score of 87%**.

### Artificial Intelligence Researcher

RaapidAI X IIT Jodhpur

Aug 2022 – May 2023

Part-time — Remote

- Developed a pipeline for extracting data from medical document images through **table detection and extraction by finetuning CascadeTabNet, DETR, DIT models**. Achieved an mAP score of 76% on table detection.
- Used novel augmentation techniques and **improved mAP score by 7%** on the gold standard private dataset.

## PUBLICATIONS

- AI-Generated Lecture Slides for Improving Slide Element Detection and Retrieval , **ICDAR 2025**. ([Paper Link](#))

## PROJECTS

### Ontology-driven self play for Biomedical LLM - BioNLP Lab UMass Amherst

Sep 2025 – Ongoing

- Training LLMs on biomedical corpora (e.g., PubMed, MIMIC) with ontology-grounded QA loops.

### SynSlideGen

Aug 2024 – Feb 2025

- Led a research project to develop an **LLM-driven** pipeline to generate synthetic presentation slides.
- Finetuned **LayoutLMV3, YOLOV9, DETR** for slide element detection and **CLIP** for slide image retrieval.

## TECHNICAL SKILLS

**Languages:** Python, SQL, C/C++, R, Java, Golang, HTML/CSS, MATLAB, LaTeX

**Tools:** Linux, Git, Docker, AWS, Dataiku, Pytorch, Tensorflow, Spark, Pandas, Numpy, Jenkins, CUDA, Excel