
Dedicated ML engineer with 3+ years of experience in playing with models.

WORK EXPERIENCE:

Machine Learning Engineer – OMEGA Labs July 2025 – Present

LLM Evaluation & Incentive Design – Redesigned the evaluation and incentive framework for a decentralized AI network.

- Revamped the scoring pipeline by identifying flaws in existing data and integrating the VoiceBench benchmark, establishing a more accurate and robust evaluation for voice-to-text models.
 - Engineered a novel "Above/Below Baseline" tiered incentive mechanism, giving 75% of emission rewards on top-performing models to drive network competition, and a baseline to push miners.
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Data Scientist II – Wolter Kluwer Jun 2023 – Jun 2025

Broker Statement – Automate data extraction from financial reports.

- Integrated AWS Textract models for extraction of tabular data from pdf.
- Later added LLM based solution (few shot, structured outputs) with **auto prompt** generation & Ability to easily test & deploy, Speeding up the whole onboarding process. Kept everything **async** for better speed.
- Kept everything configurable so the operations team could try out any approach and easily onboard a client.

Experi Core – Legacy product for banks to autogenerate forms.

- This uses custom xpath based logic, I took years of data & found redundancy, **clustered rules** for better reuse by the users, helping them in managing only unique rules. Used xpath logic with GPT-4o for clustering.
- Developed a search workbench using **Azure AI Search** services for the users to access the clusters & rules.

Digital Twin – End to end pipeline for information extraction, validation of government forms.

- Added page level classification using **DONUT** model to reduce manual work in the extraction pipeline with an accuracy of **97%** for over 15 forms with variations of different states.

BLMS Search – Search engine for licenses for businesses.

- Created a **hybrid RAG** based approach to use historical user query data to provide as search results. Historical data and new rule based results.
- Created new data using GPT-4o and custom logic to improve the RAG performance.

Other tasks

- Developed debugging framework for Digital Twin pipeline, later translated it to Langchain **AI Agents** to automate debugging in our product.
 - Worked with custom hosted LLMs, Managed multiple **microservices**, leveraged **Async** capabilities of python to **scale up** performance.
 - Regularly maintained the pipeline for multiple new requirements by adding components.
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Data Science Intern – Wolters Kluwer Jul 2022 – May 2023

Digital Twin – End to end pipeline for information extraction, validation of government forms.

- Built information extraction pipeline & Integrated with **Azure Cognitive models** achieving upto **95%** accuracy.
- Found **best training** practices for these custom models & **created a workflow** for training & testing of models streamlining & speeding up the process of onboarding.
- Analysed pdf documents to find patterns and created framework to classify them as unique forms with accuracy of **93%**. Completely configurable by operations team.

- Worked on SKU datasets to process images using Object Detection algorithms. Final model **Yolov5** resulted with an accuracy of **96%**
- Tested multiple Object detection algorithms & created visualizations for senior team members to help them choose the best algorithm (**model, size, quantization, accuracy**) for our use case.
- Tested multiple MLOps platform and finally developed my own convention for **Experiment tracking** and **Model versioning**.

RELEVANT PROJECTS:

- Trained a **Variational AutoEncoder** on the CommaAI car dataset, to understand explainability of Encoder
 - Improved generalization by using Structural Similarity Index along with MSE in training.
- Image Caption Generator
 - Trained **LSTM + Convolution backbone** to caption an image
 - Utilized Transfer Learning for Feature Extraction using **InceptionV3**
- Automated Mask Detection – Trained **YoloV3** to Detect Mask worn by a person.
- Classical Computer Vision
 - Lane Line Detection using **Edge Detection** with OpenCV, Applied Hough transforms to extract Lanes.
 - Sign Detection Robot – Used OpenCV for detection of custom signs, Robot with basic path planning based on signs detected.

ACTIVITIES:

- Doing Distributed ML training course – by Zachary Mueller
- 2nd place in DOXA AI hackathon – March 2025
 - NLP Token Classification problem – Used BERT – Explored MLM & Knowledge distillation.
- Worked on multiple projects as a freelance python developer to explore my programming skills.
- 2nd place in ROS Hackathon by IRC – 2021 July 2021
- Mentorship Under RigBetel Labs – Sep 2021
- Founder Robotics Club IIIT Pune

EDUCATION:

Bachelor of Technology in Electronics Communication Engineering, Indian Institute of Information Technology, Pune – May 2023

SKILLS:

- **Programming & Frameworks:** Python, PyTorch, Hugging Face Transformers, FastAPI, Django, Docker, Git
- **Machine Learning & Deep Learning:** Model Fine-Tuning, Vision-Language Models (DONUT, LayoutLM), Clustering.
- **AI & NLP:** LangChain (Agentic Workflows, RAG), Prompt Engineering, Semantic Search, Vector Databases (ChromaDB)
- **Cloud & DevOps:** Azure AI Search, Azure Doc Intelligence, AWS Textract, MLOps (MLflow, Weights & Biases).
- **Data Engineering:** SQL, Azure Blob Storage.