

Shubham Singh

Work Experience

Machine Learning Engineer, DoctorPlan

July 2019 - September 2024 (5yrs 3months)

DoctorPlan is a Silicon Valley-based healthcare startup revolutionizing patient care through data-driven personalization.

- Built and deployed custom predictive analysis and image analysis ML models to production.
- Designed and implemented RAG architecture for generation of Doctor's chart notes utilizing LLM to enhance operational efficiency of hospitals saving Doctor's time.
- Engineered robust data processing pipelines and guardrails for sensitive patient medical data, ensuring HIPAA compliance.
- Played a pivotal role in development and maintenance of our three major platforms: Hospital app, Patient web app and internal admin dashboard for over 5 years, serving over 100k patients.

Software Engineer, ALLPS Digital GmbH

July 2018 - June 2019 (1yr)

- Optimized in-house OCR algorithm, improving character recognition accuracy by 20-25% through ML models (AlexNet & OpenCV) and optimized data inputs enhancing invoice processing accuracy.
- Architected and developed robust dashboards and a secure payment gateway for Generali our major Swiss partner bank using python.

Cartesian (3 Months in 2018 • Internship)

- Built a livestream service using Python and AWS as the streaming server.

Projects

Multi Agent AI System (Langchain) [Github](#)

AI Agent orchestration using CrewAI, Langchain + Ollama to run llama3.1 locally. Built a team of agents that can work together to complete tasks using realtime data from web.

Training Layer Visualization (PyTorch) [Github](#)

A tool to visualize the hidden layers of the model in real-time using only Matplotlib and PyTorch, offering insights into the feature extraction process and model behavior.

Self Driving Car Simulation (Tensorflow 2, OpenCV) [Github](#)

Training a Convolutional Net to play NFS only by giving video input. I collected, labeled and did data processing from scratch. Found InceptionResNetV2 model gave the best accuracy.

Medical MRI 3D image segmentation UNet (Tensorflow 2) [Github](#)

This project involved training a deep learning model to accurately segment anatomical structures and abnormalities in MRI scans, improving visualization and aiding doctors in diagnosing and planning treatment.

Mario Reinforcement Learning (Tensorflow 2, OpenAI Gym) [Github](#)

Training a Mario reinforcement learning agent on Level 1-1 using Open AI Gym and Stable Baselines 3 PPO algorithm.

Instacode Online Judge (Javascript, php) [Github](#)

An online coding platform similar to HackerRank I made for holding College CSE department Practicals that evaluates code in 14 different programming languages and ranks/scores students making grading process much efficient.

Contact

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[Github](#)

[LinkedIn](#)

[Portfolio Website](#)

Skills

Technical Skills

- PyTorch
- Tensorflow, Keras
- Python, Numpy
- Pandas, PySpark, ETL
- SQL
- Spacy
- LLMs, RAG, Agents
- C++

Tools/Software

- ChromaDB, Pinecone
- Docker, Kubernetes
- AWS Sagemaker, Azure
- CUDA, TensorRT

Education

Krishna Institute of Engineering & Technology

Computer Science and Engineering (2014 -2018)

Interests

GPUs | Home Servers | Reading