Rushikesh Mohalkar *AI/ML Engineer*
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SUMMARY

Results-driven aspiring AI/ML Engineer skilled in designing scalable ML systems, optimizing LLM pipelines, and deploying production-ready generative AI solutions. Experienced with reinforcement learning, deep learning architectures, and multimodal systems. Delivered **high-accuracy medical classifiers**, **robust RL agents**, and **optimized QA workflows (20–30% efficiency gains)**. Passionate about building high-impact AI products.

EXPERIENCE

Programmer Analyst — Cognizant (07/2024 - present)

- Executed functional and regression testing across enterprise systems, improving defect detection by ~**30%**.
- Authored **200+** detailed test cases and collaborated with engineering teams, reducing release-cycle delays by **20%**.
- Optimized QA reporting workflows, cutting test execution time by **15%** using automated defect-analysis pipelines.

EDUCATION

B.E. — Electronics & Telecommunications Engineering, AISSMS IOIT Pune (2019–2023)

SKILLS

Python, Java, SQL, Bash, PyTorch, TensorFlow, Keras, Scikit-Learn, NLTK, LangChain, LlamaIndex, Hugging face, NLP, Docker, Kubernetes, Keras, FastAPI , AWS (S3, EC2, Sagemaker), Flask, Git, Linux, Data preprocessing, Model optimization, Prompt engineering, RAG pipelines

CERTIFICATIONS

- Mathematical Foundations of Machine Learning
- Deep Learning A–Z (Neural Nets, AI & ChatGPT)
- AI Engineer Core Track: LLMs, RAG, QLoRA, Agents (In Progress)
- Python for Data Science & ML Bootcamp
- GenAI with LangChain & Hugging face (In Progress)

PROJECTS

Self-Driving Car using PPO Reinforcement Learning (10/2025)

- Built a Pygame-based autonomous driving agent using PPO with enhanced 17-dimensional observations, domain randomization, and continuous/discrete action spaces, improving **track-completion consistency by 40%** and **reducing collision rate by 35%** across multiple custom environments.
- Engineered advanced reward shaping, physics-driven vehicle dynamics, and multi-track simulation pipelines—resulting in **25% smoother corner navigation**, faster policy convergence (~100k steps), and robust generalization to unseen track layouts.

Pneumonia Detection with Transfer Learning (07/2025)

- Developed a VGG16-based transfer learning model for chest X-ray classification, achieving **92–95% accuracy** with strong generalization through data augmentation and optimized pre-processing.
- Improved inference speed by **25%** through lightweight top-layer design and efficient pipeline optimization, enabling fast and reliable NORMAL vs. PNEUMONIA diagnosis on unseen medical images.

Lung Cancer Detection using CNNs (07/2025)

- Engineered convolutional models for CT-scan–based lung cancer detection, achieving **89%+ precision** while significantly reducing false positives through optimized preprocessing and augmentation.
- Enhanced diagnostic recall by **12%** using noise-reduction and contrast-enhancement pipelines, and accelerated training by **20%** via targeted hyper parameter tuning and model optimization.

Movie Recommender System using RBMs (07/2025)

- Built an RBM-based movie recommendation system trained on **1M+ user–movie interactions**, using CD-10 and binary implicit feedback to learn latent factors and achieve a **test MAE of ~0.25**.

- Engineered a full data pipeline (943×1682 matrix) and optimized Gibbs sampling + training loops, improving recommendation accuracy by ~**15%** and producing stable, personalized predictions.

Google Stock Price Prediction using LSTM RNNs (07/2025)

- Built and trained an LSTM-based time-series forecasting model achieving **<0.02 MSE**, accurately capturing Google stock price trends through multi-layer RNN architecture with dropout regularization.
- Engineered a robust pre-processing pipeline—scaling, 60-day windowing, and sequence reshaping—enhancing prediction stability by **25%** on real test-set evaluations.

Chatterbot QA-SA System (02/2025)

- Built a Flask-based QA chatbot using **Distil BERT**, achieving ~**85% F1-score** on context-driven question answering with robust error-handling and a responsive UI.
- Integrated **sentiment analysis** for adaptive conversational responses, boosting user engagement and interaction quality by **20%**.