Harsh Mahesh Tikone

Machine Learning and Artificial Intelligence Engineer Intern

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Summary

M.S. Artificial Intelligence candidate with experience in Python, PyTorch, reinforcement learning, deep learning and machine learning, building research-grade models that automate decisions and improve system performance.

Education

University at Buffalo   **Aug 2025 – Dec 2026**
M.S. Engineering Science (Artificial Intelligence)   GPA: 3.83/4.0
Buffalo, NY

- Machine Learning, Numerical Mathematics, Reinforcement Learning and Algorithms.

University of Mumbai   **Aug 2021 – Jul 2025**
B.Tech. Artificial Intelligence and Machine Learning   GPA: 3.82/4.0
Mumbai, India

- Completed 8+ core subjects including Neural Networks, Data Mining, Computer Vision, Natural Language Processing (NLP) and Database Systems, finishing with 2 capstone projects applying machine learning to real-world datasets.

Skills

Technical: Python, C, C++, Matlab, R, SQL, PyTorch, TensorFlow, Keras, Scikit-learn, NumPy, Pandas, OpenAI Gym, Reinforcement Learning, Deep Learning, Supervised Learning, Unsupervised Learning, Computer Vision, Natural Language Processing, Generative Adversarial Networks, Diffusion model, Large Language Models, Process Automation
Tools: Git, GitHub, Jupyter Notebook, Docker, Azure Machine Learning, Azure Document Intelligence, Power BI, Visual Studio Code, FastAPI, Streamlit
Soft and Global: Problem Solving, Analytical Thinking, Curiosity, Teamwork, Communication, Documentation, Collaboration with cross-functional teams, Microsoft Office, Google Workspace, Data Visualization

Experience

Tata Consultancy Services | Project Intern (Artificial Intelligence and Machine Learning)   **Jan 2025 – Mar 2025**
Thane, India

- Engineered an Azure-based data processing workflow integrating Azure Document Intelligence and Azure Machine Learning in Python, cutting storage costs by 30% through automated lifecycle tiering and policy-driven retention for identity documents.
- Developed a computer vision identity verification pipeline with 95% optical character recognition accuracy and over 98% face-match accuracy using deep learning models, reducing manual review time by 60% across 2 verification teams.
- Designed a predictive scoring model using 3 GPS-derived signals from sensor and location data, standardizing mapping feasibility into a single metric that accelerated candidate site comparison by 40% for 2 business cohorts.
- Led 2 stakeholder review sessions and delivered 3 production handoff artifacts (Power BI dashboards, model metrics report and workflow runbook), improving deployment readiness and traceability for downstream automation teams by 50%.

Projects

Hybrid Movie Recommendation System (LightGCN) | PyTorch, Python, SQL, Spark, Git

- Implemented a graph-based recommender using LightGCN in PyTorch on 30M+ user–item interactions, achieving Recall@10 of 0.38 and NDCG@10 of 0.21 on held-out data to demonstrate scalable machine learning for personalization.
- Enhanced Recall@10 by 12% over a matrix factorization baseline by combining collaborative signals with natural language processing metadata embeddings, validating the hybrid design through 2 ablation tests and detailed error analysis.
- Optimized model training through hyperparameter tuning across 15+ configurations for learning rate, regularization and number of layers, reducing validation loss by 18% and stabilizing ranking metrics across 3 evaluation runs.
- Versioned experiments with Git and structured logging, producing 1 reproducible training pipeline and 1 comprehensive results report that documented metrics, design choices and future reinforcement learning directions for ranking policies.

RAG Document Question Answering Assistant | Python, Embeddings, FAISS, LangChain, Jupyter

- Architected a retrieval-augmented generation pipeline chunking documents into 300–500 token segments and embedding them for semantic retrieval with FAISS, enabling sub-2 second query latency for 1,000+ user questions.
- Improved answer accuracy from 60% to 78% on a 50-question evaluation set by iterating on retrieval strategies, prompt templates and ranking heuristics, demonstrating strong experimentation skills in applied machine learning.
- Generated responses with 2–3 citations per answer, increasing transparency and trust for downstream users and aligning with large language model best practices for explainability across 5 tested document collections.