

# PRAJWAL KUMAR

AI / Machine Learning Engineer — Data Science — Generative AI

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## SUMMARY

AI/ML Engineer with hands-on experience building, evaluating, and deploying production-grade ML systems and data-driven applications. Strong background in supervised learning, deep learning, and generative AI, with end-to-end ownership across data processing, model training, experimentation, and cloud-native deployment using Python, PyTorch, AWS, and GCP.

## EDUCATION

Carnegie Mellon University

Pittsburgh, PA

Master of Science in Artificial Intelligence Engineering, GPA: 3.6

December 2025

Coursework: Data Engineering, Deep Learning, Machine Learning in Production, Generative AI, Trustworthy AI

Maharshi Dayanand University

Rohtak, India

Bachelor of Technology in Computer Science and Engineering

June 2024

## EXPERIENCE

Infinite Computer Solutions

Irving, TX

AI/ML Summer Intern

May 2025 - August 2025

- Designed and deployed an agentic AI system to automatically extract, structure, and analyze telecom plan data across major U.S. carriers, reducing manual testing and enabling faster, data-driven market comparisons for enterprise stakeholders.
- Built a production-grade retrieval-augmented generation (RAG) system backed by a Neo4j knowledge graph, enabling semantic search over large-scale telecom plan data and improving discoverability for product and analytics teams.
- Containerized and deployed the end-to-end system using Docker and Kubernetes (Helm), delivering a scalable Streamlit-based analytics dashboard with data export to support faster, self-serve business analysis.

Qriocity

Chennai, India

Machine Learning Developer Intern

January 2024 - February 2024

- Developed a healthcare-focused ML pipeline using TensorFlow to model medical ontologies and predict prescriptions from structured clinical data, achieving 99% accuracy and demonstrating real-world applicability in clinical decision support.
- Built a multimodal ML system using TensorFlow-based DNNs and KNN classifiers to model emotional VAD signals from text features (TF-IDF), enabling reliable emotion classification for mental health applications.

Zummit Infolabs

Bengaluru, India

Data Science Intern

November 2022 - March 2023

- Built and evaluated an NLP-based text classification pipeline in PyTorch to detect toxic content in social media comments, using feature preprocessing and supervised learning to support automated content moderation.

## ACADEMIC RESEARCH & PROJECTS

End-to-End Movie Recommender with Kafka, Kubernetes, and A/B Testing - Carnegie Mellon ([GitHub](#))

- Built a scalable KNN-based movie recommender (NDCG@10 = 0.9983, 65K+ QPS) with Dockerized microservices, Kubernetes, CI/CD (Jenkins), and CRON-based retraining; integrated A/B testing and real-time monitoring with Grafana.

Emotion-Aware Multimodal AI Companion - Carnegie Mellon University ([GitHub](#))

- Built a multimodal AI companion with speech-to-text (Google API), CNN-based SER (71.2%), and Transformer models; improved LLM empathy by 30% via psychoanalysis modules and deployed a Streamlit app for real-time emotion feedback.

Cloud-Native Soccer Player Valuation Platform - Carnegie Mellon University ([Github](#))

- Designed an end-to-end data system on GCP to predict player value; built PySpark ETL pipeline from GCS to Cloud SQL (PostgreSQL) and trained regression models (SparkML, PyTorch) using Optuna/CrossValidator, deployed via Cloud Run.

Neural Robot Dynamics: Linear-Time Inference and Long-Horizon Stability via Selective SSMs ([Report](#))

- Replaced Transformer dynamics with Mamba (SSM) and Jamba hybrid (SSM + attention) to enable linear-time inference and state-of-the-art sim-to-sim fidelity, limiting RL policy degradation to 1.37% over long-horizon rollouts.

Advancing Image Security through Deep Learning and Cryptography in Healthcare Industry - IEEE ([Paper](#))

- Conference paper on a deep learning-based cryptographic framework for securing medical images in IoMT environments.

## SKILLS

Programming & Data: Python, SQL, Pandas, NumPy, PySpark, PostgreSQL, Neo4j, AWS, GCP, Streamlit

ML & GenAI: PyTorch, TensorFlow, Scikit-learn, LangChain, OpenAI GPT, LLMs, RAG, Vector Databases, Playwright

Systems & MLOps: Git, Docker, Kubernetes, Kafka, MLflow, Jenkins, CI/CD, Linux, REST APIs, Prometheus, Grafana