PRAJWAL KUMAR

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EDUCATION

Carnegie Mellon University **Pittsburgh, PA**
MSaster of Science in Artificial Intelligence Engineering - Information Security, GPA: 3.6/4.0 December 2025
Coursework: Machine Learning, Data Engineering and Pipelines, Deep Learning, ML in Production, Gen AI and LLM.

Maharshi Dayanand University **Rohtak, India**
Bachelor of Technology in Computer Science and Engineering, GPA: 8.27/10 June 2024

EXPERIENCE

Infinite Computer Solutions **Irving, TX**
AI/ML Summer Intern **May 2025 - Present**
- Developed an Agentic AI system using Playwright and LangChain to automate and log the full customer phone purchase journey on telecom websites for anomaly detection.
- Integrated LLM-driven agents with browser automation to dynamically execute user flows such as product selection, checkout, and form-filling on Straight Talk's website.

Qriocity **Chennai, India**
Machine Learning Developer Intern **January 2024 - February 2024**
- Engineered medicine prescription ontology using TensorFlow and RDFLib with graph-based knowledge representation.
- Implemented email phishing detection model using ensemble of Logistic Regression classifiers with TF-IDF vectorization for feature extraction, achieving 96% accuracy with focus on minimizing false negatives.
- Created Speech-to-Text interview system with SpeechRecognition and natural language processing pipeline, incorporating probabilistic model for recruitment likelihood prediction with Streamlit deployment.
- Designed emotion detection system using transfer learning in TensorFlow with K-NN for psychological indicators.

ScriptEdge Pvt. Ltd. **Akola, India**
Machine Learning Intern **July 2022 - August 2023**
- Implemented generative multimodal system using Stable Diffusion with ControlNet for conditional image generation, integrating OpenAI Whisper for speech-to-text and custom prompt engineering for domain-specific outputs.
- Engineered multilingual text classification system using bidirectional LSTM networks with attention mechanisms.
- Built RASA conversational AI with 30+ intents, custom NER pipeline, and database integration for enterprise deployment.
- Designed computer vision system for QR code artistic integration using conditional GAN architecture with ControlNet, implementing perceptual loss functions to maintain QR functionality while maximizing aesthetic quality.

Zummit Infolabs **Bengaluru, India**
Senior Data Science Intern **November 2022 - March 2023**
- Led development of driver drowsiness detection using CNN-LSTM with Keras and OpenCV (94% accuracy, 2800 images).
- Designed Squeeze-Excitation Network for image quality classification with channel attention mechanisms (92% accuracy).
- Developed toxic content classifier using PyTorch with BERT embeddings and adversarial training (96% accuracy).

ACADEMIC RESEARCH & PROJECTS

Malware Classification using Multi-Modal Approaches – Carnegie Mellon University (GitHub)
- Designed a multi-modal malware detection pipeline using CNN (ResNeXt), XGBoost (n-grams), and LLaMA-based LLMs, achieving 99.68% image classification accuracy and building a real-time GUI with JSON-based LLM explainability.

Emation-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.

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.

Multilingual RAG Pipeline for Research Paper Recommendation using Mistral AI - Carnegie Mellon (Github)
- Developed a multilingual RAG pipeline with ChromaDB for semantic search across research papers. Integrated Mistral LLM with LangChain, compared embedding models and deployed a Streamlit application for paper recommendations.

SKILLS

Languages/Packages: Python, SQL, Pandas, NumPy, NLTK, Keras, Scikit-learn, TensorFlow, PyTorch, PySpark, OpenCV
Tools: Git, AWS, Google Cloud (Speech-to-text, BigQuery, Gemini, Vertex AI), Kubernetes, MLflow, Mistral AI, LangChain, Linux, PostgreSQL, Docker, Neo4j, Kafka, Vector Databases, Streamlit, Jenkins, Prometheus, Grafana, Flask, CI/CD