PARTH DHARMENDRA PRAJAPATI

parthdpraja@gmail.com | +1 (213) 421-4355 | LinkedIn | Portfolio

EDUCATION

University of Southern California   Los Angeles, California
Master of Science in Computer Science   August 2023 - May 2025
- Relevant Courses: AI, Machine Learning for Data Science, Analysis of Algorithms, Database Systems, Web Technologies

University of Mumbai   Mumbai, India
Bachelor of Engineering in Information Technology   August 2019 - May 2023
- Achieved a GPA of 9.19 out of 10
- Relevant Courses: Machine Learning, Web Development, Operating System, Big Data Analytics, Natural Language Processing

SKILLS

- **Programming languages:** Python, JavaScript, Java, R, C
- **ML Libraries:** Scikit-learn, PyTorch, NumPy, Matplotlib, Pandas, Keras, TensorFlow, LangChain, TRL (Transformer Reinforcement Learning), Hugging Face Transformers
- **Web Technologies:** React, Node.js, Express.js, AJAX, MongoDB, MySQL, HTML, CSS, Flask, Streamlit, AWS
- **Soft Skills:** Problem Solving, Critical Thinking, Leadership, Teamwork, Communication, Time Management, Adaptability

PROFESSIONAL EXPERIENCE

Vayu Technology Corp.   Los Angeles, California
Data Science Intern   August 2024 - Present
- Developing an LLM application by designing effective prompts and code to optimize model responses and user interactions
- Developed algorithms for the Equilibrium System, analyzing sensor data to enhance system performance using Python
- Designed advanced logic for Pocket TUG, pushup, endurance run, and walk, identifying key patterns and critical signal points
- Built an efficient threshold model for calibration checks across body segments, improving sensor accuracy with <10% failure rate
- Collaborated closely with the team, documenting work, and sharing detailed progress for clear and effective communication

University of Southern California   Los Angeles, California
Lead Course Producer (ISE 583: Enterprise-Wide Information Systems, Spring 2025)   January 2025 - Present
- Led course logistics and facilitation for ISE 583, managing a class of 59 students with the professor and 2 Course Producers
- Graded assignments and exams, provided timely feedback, conducted mentoring hours, and offered academic support
- Assisted in conducting the ERP Simulation Game, tested assignments, and clarified course material to enhance student learning

University of Southern California   Los Angeles, California
Teaching Assistant (ITP 259: Basics of Artificial Intelligence, Fall 2024)   August 2024 – December 2024
- Assisted with grading assignments and exams for ITP 259, providing timely feedback to 30 students alongside the professor
- Supported students with course material clarification and conducted open lab sessions to facilitate hands-on learning
- Tested assignments and addressed student queries to ensure their thorough understanding of course concepts

ACADEMIC PROJECTS

SmartMedAI: Fine-tuning MedicalQA-based LLM using Reinforcement Learning from AI Feedback (RLAIF)
- Fine-tuned a MedicalQA-based LLM using LoRA, achieving a 2% improvement in BLEURT score for generated answers quality
- Built a preference dataset using RLAIF with a secondary LLM evaluating open-ended medical responses for DPO
- Developed a Direct Preference Optimization (DPO) pipeline to align the model for clinically accurate and relevant responses

SmartPDF Chat: AI-Powered Document Analysis
- Created a Python web application for natural language querying of multiple PDFs leveraging LangChain, PyPDF2, and Streamlit
- Implemented an end-to-end pipeline for text extraction, chunking, and vector representation with sentence-transformers
- Achieved precise response generation through similarity matching with faiss-cpu, flan-t5-xxl model, and InstructorEmbedding

Transfer Learning for Image Classification
- Developed a multi-class image classifier using transfer learning with ResNet50, ResNet101, EfficientNetB0, and VGG16 models
- Applied frozen feature extraction and advanced data augmentation (cropping, rotation, flipping) to address limited data
- Achieved 91.8% accuracy with EfficientNetB0, outperforming deeper models using TensorFlow and Keras frameworks

Performance Analysis of Diffusion Model for Cloud Removal from Satellite Images
- Built a model to remove clouds from satellite images using Diffusion models and U-Net Architecture and achieved 91% accuracy
- Researched 10 papers related to cloud removal techniques for literature survey and result comparison with other techniques
- Utilized Google Colab, Python, PyTorch, NumPy, and Matplotlib for implementation

Stock Analytics Web Application
- Created a responsive React UI, integrating AJAX calls for real-time stock data from Finnhub deploying Node.js and Express.js
- Implemented features dynamic Highcharts charts and social media sharing, enhancing user interaction and data visualization
- Implemented MongoDB for data management and deployed the application on AWS, specifically using Amazon EC2 instances

COURSES AND CERTIFICATES

- IBM Generative AI Engineering Professional Certificate, Coursera
- AWS Cloud Solutions Architect Professional Certificate, Coursera
- Cloud Engineering and Data Science & Machine Learning Track, Google Cloud Program
- "Machine Learning A-Z: Hands-On Python & R In Data Science" course, Udemy