Anant Pareek

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AI/ML developer merging psychology with machine learning to build emotionally intelligent systems. Developing end-to-end deep learning pipelines and fine-tuned LLMs, deployed with MLOps to create real-world, user-facing AI solutions.

PROJECTS

Multi-Model Adaptive Personality AI | *Custom Model Quantization & Optimization, API Deployment* [GitHub]
- Engineered a custom RobertaForRegression model to resolve critical training instability in transformer-based regression, boosting the EmoBank R^2 score from a baseline of 0.13 to a state-of-the-art 0.47
- Designed and deployed a complete microservices architecture, hosting five specialized models as independent Gradio APIs on Hugging Face Spaces
- Fine-tuned and benchmarked a suite of large-scale transformers, including RoBERTa-large and a Gemma-2B "Personality Brain," against classic ML baselines to identify the optimal model for four distinct NLP tasks
- Built a central Streamlit dashboard to orchestrate the backend APIs, providing an interactive interface for live, multi-model analysis and chat

EEG Motor Imagery Classification with Deep Learning | *Deep Learning, MLOps, TensorFlow* [GitHub]
- Engineered an end-to-end deep learning pipeline to classify motor imagery tasks from raw EEG data
- Achieved 74.8% accuracy on held-out test set, outperforming baseline models
- Implemented Dockerized environment and CI/CD via GitHub Actions for reproducible, scalable experimentation

CAEE: Context-Aware Empathic Engine v3.0 (Mistral 7B) | *LLM Fine-Tuning, LoRA, PyTorch* [GitHub]
- Fine-tuned Mistral 7B LLM using LoRA to develop a context-aware, emotionally intelligent chatbot
- Achieved weighted F1-score 0.65, with 0.84 F1 for key categories like acknowledgment
- Deployed a real-time Gradio interface for interactive demonstrations

World Happiness Report Analysis (2015–2024) | *Data Analysis and Visualization, Predictive Modeling* [GitHub]
- Improved Gradient Boosting model, reducing RMSE from 0.6417 $\rightarrow$ 0.5220 on 2015–2024 happiness data
- Quantified post-pandemic shift: Social Support became 22% stronger predictor of well-being, GDP influence declined by 25%
- Demonstrated data-driven insights on societal trends for decade-long global analysis

PUBLICATIONS & PRE-PRINTS

A Multi-Component AI Framework for Computational Psychology: From Robust Predictive Modeling to Deployed Generative Dialogue (2025)
Submitted to the International Journal of Human - Computer Studies (under peer review).
Pre-print available at:[SSRN]

EDUCATION

TiHAN, IIT Hyderabad
Specialized AI/ML Program with Drone Tech   *July 2025 – Jan 2026*

WorldQuant University
Applied AI Lab, Deep Learning for Computer Vision   *July 2025 – July 2026*

St. Joseph's University
Bachelor of Arts, Psychology and Optional English   *July 2022 — May 2025*

TECHNICAL SKILLS

Languages: Python, R, SQL
Frameworks: PyTorch, TensorFlow, Keras, FastAPI, Flask, React
AI/ML Tools: Hugging Face (Transformers, PEFT, Spaces), LoRA, Model Quantization, Scikit-learn, Pandas, NumPy, Matplotlib, Seaborn, Gradio
MLOps/Dev Tools: Git, Docker, GitHub Actions, CI/CD, Google Cloud Platform, AWS, VS Code

CERTIFICATIONS

IBM AI Developer Professiona
IBM Deep Learning with PyTorch, Keras, TensorFlow
IBM Data Science Professional
Google Data Analytics Professional
UC Davis Market Research Specialization
APA Psychological Research Specialization