



# Tejas Patel

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AI/ML Engineer, AI Developer, ML Data Engineer — LLMs, NLP, Gen AI, MLOps

## EDUCATION

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**M.S. in Computer Science (AI/ML focus)** Saint Louis University (Jan 2024 – Dec 2025)

Relevant Coursework: Machine Learning, Deep Learning, NLP, Computer Vision, Data Mining, AI Algorithms

*Hands-on experience with LLM finetuning, NLP, and computer vision using PyTorch, Hugging Face, and Databricks. Built end-to-end projects around feedback generation, CLIP-based zero-shot image classification, and an AI-powered mental health support app.*

## TECHNICAL SKILLS

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| <b>Languages</b>    | Python, Java, SQL, JavaScript, Bash, C/C++  |
| <b>ML / DL</b>      | PyTorch, TensorFlow, scikit-learn, PyTorch, Hugging Face Transformers/PEFT, CLIP, XGBoost, CatBoost |
| <b>NLP</b>          | Prompt engineering, RAG, tokenization, evaluation (BLEU/ROUGE), text classification, summarization  |
| <b>Vision</b>       | OpenCV, zero-shot classification (CLIP), data augmentation, transfer learning                       |
| <b>MLOps</b>        | MLflow, Weights & Biases, model versioning, inference APIs (FastAPI), Docker, experiment tracking   |
| <b>Data</b>         | pandas, NumPy, Matplotlib, Databricks (PySpark), Delta Lake, data validation                        |
| <b>Cloud</b>        | AWS (S3, EC2 basics), Git/GitHub, Linux; basic Kubernetes & containerization                        |
| <b>Optimization</b> | LoRA/QLoRA, quantization (int8/4), Unsloth, ONNX export (basic)                                     |

## SELECTED AI/ML PROJECTS

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**Generative AI for Automated Feedback in CS Courses** *LLMs, NLP — 2025*

Collected and curated a dataset of 1,000+ CS question-answer pairs and trained a baseline text classifier (Python, scikit-learn) to predict rubric-based labels. Prompt-engineered an LLM (LLaMA / GPT-style) to generate rubric-aligned feedback for student answers and evaluated quality using accuracy/F1 and targeted human review.

**CLIP Zero-Shot Image Classification (Flowers-102)** *Computer Vision — 2025*

Applied CLIP for zero-shot classification on the Flowers-102 dataset and analyzed per-class accuracy and confusion matrices. Tested different prompt templates and simple ensembling to study how text descriptions affect model performance in zero-shot settings.

**Fast LLM Finetuning with Unsloth + LLaMA 3.2** *Instruction Tuning — 2025*

Finetuned an instruction-tuned LLaMA 3.2 model using Unsloth with LoRA/QLoRA to run under limited GPU memory. Compared training speed, memory usage, and response quality across adapter sizes and hyperparameters to understand efficiency-performance trade-offs.

**Mindheaven — Mental Health Support (NLP Prototype)** *Product/NLP — 2025*

a mental health support web app with blogs, mini-games, guided exercises, music playlists, therapist booking, and an AI chatbot using Ollama. Implementing backend and AI components using [your real stack, e.g., Python/FastAPI or Node.js, LLM APIs, simple RAG] and a responsive web UI with focus on safe, empathetic responses

a complete EEG decoding system using PhysioNet data, including preprocessing, feature engineering, and model training. Implemented classical ML (SVM) and deep learning (EEGNet) architectures for motor-imagery classification. Evaluated model performance with training curves and confusion matrices, demonstrating practical BCI signal-processing skills.

## ADDITIONAL

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**Interests:** Efficient finetuning, evaluation design, human-in-the-loop feedback, Brain Computer Interface research, Signal decoding.

**Technical Keywords:** Machine Learning, Deep Learning, Generative AI, LLMs, NLP, Text Classification, Prompt Engineering, CLIP, Zero-shot Image Classification, Computer Vision, Python, scikit-learn, LLaMA 3.2, Unsloth, LoRA, QLoRA, Instruction Tuning, Parameter-efficient Finetuning, Model Evaluation, Dataset Creation, AI Chatbot, Mental Health Support Web App, RAG, FastAPI/Node.js, Web APIs.