Aniket Patel

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EDUCATION

ASHLAND UNIVERSITY Ashland, OH
Bachelor of Science Expected May 2026
Major: Computer Science
Minors: Mathematics, Management Information Systems, Honors Program
GPA: 3.7/4.0

WORK EXPERIENCE

Ashland University Ashland, OH
AI/ML Researcher January 2024 - Present

- Led development of an AI-driven agricultural IoT system, improving crop selection by integrating real-time sensor data with a cross-platform React Native app and a Random Forest Classifier model.
- Architected an irrigation and disease detection module reducing water waste by 25% and achieving 98% disease detection accuracy with the EfficientNetB7 model.
- Authored two forthcoming research papers on regression models and hardware accelerators (CPU, GPU, TPU) for AI workloads.
- Presented two conference presentations on CNN digit recognition and plant disease detection at Ohio Academy of Science.

Wilkes University Wilkes-Barre, PA
Deep Learning Researcher June 2023 - August 2023

- Researched existing protein-protein interaction site prediction models (DeepPPISP, D-PPIsite) to identify areas for improvement.
- Engineered a novel prediction model that outperformed existing models by 15% in accuracy through a custom TensorFlow architecture.
- Optimized dataset quality, boosting model performance by 25% by implementing rigorous preprocessing pipelines like normalization, feature scaling, outlier removal and dimensionality reduction.

PROJECTS

Multimodal RAG Model for PDFs: *LangChain, Groq, Hugging Face, Pinecone*

- Created a Retrieval-Augmented Generation (RAG) system for PDF document Q&A, improving information access speed by 60% by using LangChain, Pinecone, and Groq for scalable vector search.
- Improved query accuracy by 35% by engineering a modular information retrieval pipeline with Groq's high-performance interface.
- Demonstrated 95% answer relevance by integrating LangChain's NLP with Pinecone's real-time vector similarity search.

MeetMate: *ReactNative, Firestore, LLaMA 3.3, Whisper*

- Built a cross-platform meeting assistant app to automate summaries and task generation, improving meeting productivity by 30% using LLaMA 3.3 70B and Whisper.
- Delivered 100% real-time sync by designing a Firestore-based backend for seamless data storage and retrieval.

AI Research Paper Chatbot: *FastAPI, Angular, PostgreSQL, LLaMA*

- Developed an AI chatbot for research paper analysis with a fine-tuned LLaMA model, boosting user productivity by 50%.
- Achieved 90% faster query response times by deploying a FastAPI backend with an Angular frontend for real-time interaction.
- Boosted research accuracy by 20% through contextual summarization enabled by refining LLaMA's fine-tuning pipeline.

AI-Powered Image Classifier: *TensorFlow, Flask, OpenCV, HTML, CSS, JavaScript, Convolutional Neural Network*

- Designed a CNN-based image classifier using OpenCV for preprocessing, achieving 96% accuracy in detecting AI-generated images.
- Reduced manual review time by 80% through real-time deployment using a Flask backend.
- Enhanced user experience by designing a responsive web interface with clear visual feedback using HTML, CSS, and JavaScript.

TECHNICAL SKILLS

Programming Languages: Python, Java, C++, Swift, PHP, JavaScript, TypeScript, Kotlin, SQL (MySQL, PostgreSQL)
Framework & Libraries: PyTorch, TensorFlow, Scikit-Learn, XGBoost, LightGBM, AllenNLP, Pandas, NumPy, Matplotlib, Seaborn, SciPy, Plotly, React, Next.js, Vue.js, Angular, Tailwind CSS, Node.js, Express.js
Deep Learning & NLP: Transformers, CNNs, OpenCV, SpaCy, NLTK, LLaMA, BERT, GPT
Machine Learning & Model Deployment: FastAPI, Flask, ONNX, TensorFlow Lite, MLflow, Docker, Kubernetes
Cloud & Data Platforms: AWS, Google Cloud, Microsoft Azure, Google Colab, TensorFlow Cloud, Sagemaker
Version Control & Tools: Git, GitHub, Jupyter Notebooks, Visual Studio Code, Android Studio, PowerBI, Tableau, OpenAI, Hugging Face, Nebius AI Studio, LangChain, Pinecone, Groq