

# Aniket Patel

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## EDUCATION

### ASHLAND UNIVERSITY

Bachelor of Science

Major: Computer Science

Minors: Mathematics, Management Information Systems, Honors Program

GPA: 3.7/4.0

Ashland, OH  
Expected May 2026

## WORK EXPERIENCE

### Ashland University

AI/ML Researcher

Ashland, OH  
January 2024 - Present

- Improved crop selection accuracy by 30% by building an AI-driven agricultural IoT system that combined real-time sensor data, React Native interface, and a Random Forest Classifier.
- Reduced water waste by 25% and achieved 98% disease detection accuracy with a custom EfficientNetB7-based model.
- Advanced institutional research by authoring two papers on regression models and hardware accelerators (CPU, GPU, TPU).
- Presented two conference presentations on CNN digit recognition and plant disease detection at Ohio Academy of Science.

### Wilkes University

Deep Learning Researcher

Wilkes-Barre, PA  
June 2023 - August 2023

- Researched existing protein-protein interaction site prediction models (DeepPPIISP, D-PPIsite) to identify areas for improvement.
- Boosted prediction accuracy by 15% by developing a custom TensorFlow model for protein-protein interaction site prediction.
- Optimized model performance by 25% through preprocessing methods like normalization, 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.
- Increased 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.
- Elevated research accuracy by 20% through contextual summarization enabled by refining LLaMA's fine-tuning pipeline.

### MarketMinds: React, FastAPI, CrewAI, Gemini, LangChain, SerpAPI

- Minimized manual product research time by 60% by building an AI-driven web application with Gemini LLM and CrewAI agents for automated insights and strategy.
- Enhanced user research productivity by 2x by engineering 4 autonomous agents powered by CrewAI and Gemini that automated product insights, competitor analysis, review summarization, and strategic planning.
- Shipped 5 real-time market intelligence tools including pricing comparison and gap detection by integrating SerpAPI and LangChain into a modular React frontend and scalable FastAPI backend.

## 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, CrewAI