Ankur Desai

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EDUCATION

Michigan State University   Expected, May 2028
B.S. in Computer Science   *East Lansing, MI*
- GPA: 3.74 / 4.0
- Vice President of Claude Builders Club @ MSU
- Relevant Coursework: Linear Algebra, Discrete Mathematics, Object-Oriented Software Design, Computer Organization and Architecture, Data Structures & Algorithms

EXPERIENCE

Machine Learning Team   September 2025 - Present
Unmanned Systems   *East Lansing, MI*
- Architected autonomous drone software on Nvidia Jetson implementing real-time sensor fusion (GPS, IMU, barometer), integrating YOLOv11 object detection for autonomous navigation with obstacle avoidance at 24 FPS.
- Engineered end-to-end machine learning pipeline: curated 5,000+ aerial image dataset, applied data augmentation techniques, and optimized YOLOv11 inference using TensorRT on embedded hardware.
- Integrated computer vision system with Cube Orange+ flight controller via MAVLink protocol, enabling vision-based position hold and autonomous payload delivery within 10-foot precision from 70+ feet altitude.

Web Development Intern   May 2025 - August 2025
WFS Consulting Group   *Plymouth, MI*
- Designed and developed a responsive website using HTML5, CSS3, and JavaScript, ensuring consistent performance across Chrome, Firefox, Safari, and Edge.
- Reached 95+ Google Lighthouse scores boosting engagement by 250% through contact forms and Google Analytics.
- Deployed production website to Linux servers with Apache and SSL certificates, maintaining 99.9% uptime.

PROJECTS

ThinkStack   August 2025 - Present
Project Team Lead | React, Tailwind, FastAPI, Neo4j, PostgreSQL   *East Lansing, MI*
- Architected a full-stack React web application with component-based design, enabling real-time CRUD operations and integrating authentication and role-based access using FastAPI, SQLAlchemy ORM, and PostgreSQL.
- Engineered seamless integration with Neo4j to support dynamic relationship queries for advanced data models.
- Led a team of 6 through Agile/SCRUM, automating CI/CD pipelines with Jest and Pytest, with 87% code coverage.

Mira - AI Personal Assistant   May 2025 - September 2025
Full-Stack Development | Python, FastAPI, SQL, Electron, React   *GitHub Link*
- Engineered audio processing pipeline with noise reduction using spectral gating, improving OpenAI Whisper speech recognition from 78% to 95% accuracy in noisy environments (SNR < 10dB).
- Developed natural language processing pipeline integrating Whisper for transcription, DBSCAN for speaker diarization, and Sentence Transformers for intent classification, processing 1,000+ daily interactions with 92% accuracy.
- Implemented intelligent client selection algorithm using RSSI proximity estimation and FFT ambient noise analysis for dynamic command routing with 89% selection accuracy.

WizViz - SpartaHack X   February 2025
Hackathon | Python, OpenCV, MediaPipe, PyGame   *Devpost Link*
- Built a real-time multiplayer AR game using OpenCV and PyGame, achieving 60 FPS on Windows and MacOS.
- Implemented gesture-based controls and custom physics engine with collision detection for 2-player wizard duels.
- Used MediaPipe Pose for skeletal tracking on 33 landmarks with sub-30ms latency; won Interactive Media track among 100+ projects and 350+ participants at SpartaHack X.

TECHNICAL SKILLS

Languages . . . . Python, Java, C/C++, JavaScript/TypeScript, HTML5, CSS3, SQL, Bash
Libraries . . . . TensorFlow, PyTorch, OpenCV, MediaPipe, YOLOv11, NumPy, Sentence Transformers
Databases . . . . PostgreSQL, Neo4j, AWS RDS
Frameworks . . . . React, Vite, Node.js, Electron, FastAPI, SQLAlchemy, Tailwind CSS
Cloud & DevOps . . . . . Docker, Git, CI/CD Pipelines, AWS (Lambda, EC2, Cloudwatch), Google Cloud Platform