

# Ankur Desai

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## EDUCATION

### Michigan State University

B.S. in Computer Science

Expected, May 2028

*East Lansing, MI*

- GPA: 3.74 / 4.0
- Involvement: VP of Claude Builder Club, Eagle Scout
- Relevant Coursework: Linear Algebra, Discrete Mathematics, Object-Oriented Software Design, Computer Organization and Architecture, Data Structures & Algorithms

## EXPERIENCE

### Michigan State Unmanned Systems Team

August 2025 – Present

Software Engineer — Autonomous Systems

*East Lansing, MI*

- Developed autonomous drone software on Nvidia Jetson using MAVLink, and Orange+ Flight controller
- Engineered end-to-end machine learning pipeline: curated 5,000+ aerial image dataset, applied data augmentation, and optimized CUDA-accelerated YOLOv11 inference using TensorRT on embedded hardware.
- Fused YOLOv11 object detection with real-time data from GPS and the IMU achieving 89% accuracy in visual target recognition, dynamic obstacle avoidance, and autonomous multi-waypoint navigation

### Web Development Intern

June 2025 – August 2025

WFS Consulting Group

*Plymouth, MI*

- Crafted Figma design and implemented responsive React application using JavaScript and HTML5.
- Achieved 95+ Google Lighthouse scores and increased engagement and visibility through contact forms.
- Deployed production website on Linux server using SSL certificates and integrated Google Analytics.

## PROJECTS

### ThinkStack — Relationship Powered Note Taking Application

September 2025 – November 2025

Project Lead | *React, Tailwind CSS, FastAPI, Neo4j, PostgreSQL*

*East Lansing, MI*

- Led a cross-functional team of 6 (4 engineers, 2 designers) to develop a full-stack note-taking app with React and FastAPI, architecting an integrated dual-database system with PostgreSQL and Neo4j.
- Drove Agile development and SCRUM sprints, streamlining automated CI/CD pipelines with GitHub Actions to cut deployment time by 62% and boost code coverage to 87% through Jest and Pytest testing.
- Implemented JWT-based authentication and role-based access control, developing custom FastAPI CORS middleware to securely validate tokens and enforce permissions across API endpoints.

### Mira — AI Personal Assistant

May 2025 – September 2025

Full-Stack Development | *Python, FastAPI, SQL, Electron, React*

*GitHub Link*

- Architected distributed multi-device system with intelligent client selection algorithm using proximity scoring and ambient noise analysis, enabling seamless voice command routing across multiple endpoints.
- Integrated OpenAI Whisper and Google Gemini APIs for voice transcription and natural language understanding, processing 1,000+ daily interactions through robust error handling and lazy-loading.
- Deployed microservices architecture on AWS Lambda, implementing JWT authentication, Redis caching, and PostgreSQL query optimization.

### WizViz — Multiplayer AR Wizard Game

February 2025

SpartaHack X | *Python, OpenCV, MediaPipe, PyGame*

*Devpost Link*

- Developed real-time multiplayer AR wizard-duel game using OpenCV and PyGame, winning the Interactive Media track among 100+ projects and 350+ participants at SpartaHack X
- Built a custom physics game engine with collision detection for gesture-based controls and interactions.
- Used MediaPipe Pose for skeletal tracking of 2 players on 33 landmarks with sub-30ms at 60 FPS.

## TECHNICAL SKILLS

**Languages** ..... Python, Java, C/C++, JavaScript/TypeScript, HTML5, CSS3, SQL, Bash  
**Frameworks** ..... React, Vite, Node.js, Electron, FastAPI, SQLAlchemy, REST APIs, Tailwind  
**Databases** ..... PostgreSQL, Neo4j, AWS RDS, Redis  
**Cloud & DevOps** ..... Docker, Git, CI/CD, AWS (Lambda, EC2, ECS), Google Cloud