Ankur Desai

(248) 657 – 3805 | ardusa05@gmail.com | ardusa.github.io | linkedin.com/in/ardusa

EDUCATION

Michigan State University — Expected, May 2028
B.S. in Computer Science — *East Lansing, MI*
- GPA: 3.74 / 4.0
- Involvement: Vice President & Ambassador 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 University Unmanned Systems — Feb. 2025 – Present
Software Engineer — *East Lansing, MI*
- Engineered autonomous drone payload delivery system on Nvidia Jetson, integrating MAVLink and Orange+ flight controller, capable of releasing packages from $80+$ feet altitude with a precision of ± 3 feet.
- Built machine learning pipeline: cleaned and labeled 5K aerial images, trained and tuned YOLOv11 model, and validated real-time inference on embedded CUDA hardware with TensorRT through regression tests.
- Benchmarked Python inference against a refactored C++ implementation, achieving a 36% improvement in detection latency on embedded platforms.

MindMosaic — Relationship Powered Note Taking Tool — Aug. 2025 – Nov. 2025
Software Engineer — *East Lansing, MI*
- Led team of 4 developers as project lead, developing a note-taking app using a chapter-and-page model, letting users compose concepts, layer Markdown segments, and visually connect ideas with annotated links.
- Orchestrated agile sprints and CI/CD workflows, and expanded PyTest and Jest testing suites to achieve 94% code coverage through unit and integration tests.
- Implemented a dual-database architecture integrating PostgreSQL and Neo4j, increasing query speeds by 48% and reducing database load by 30%.
- Built a modular React web app with Vite and Tailwind CSS for rapid and responsive styling, component-based architecture, efficient batching algorithms using the marked library, and OAuth2 authentication.

WFS Consulting Group — June 2025 – August 2025
Web Development Intern — *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.

PROJECTS

Mira — AI Personal Assistant | *FastAPI, PostgreSQL, Next.js, Tailwind* — May 2025 – Nov. 2025
- Engineered an AI assistant that continuously fuses audio from multiple devices, detects actionable intent, utilizes Gemini API to extract data, and integrates with user tools to asynchronously complete tasks.
- Deployed containerized RAG pipeline on a FastAPI backend (AWS EC2 & AWS RDS), incorporating sentiment analysis and Named Entity Recognition (NER), interpreting intent and disambiguating user commands.
- Designed Electron and Next.js desktop client, incorporating OAuth2 authentication, OS keychain for secure credential storage, and RTC-based Voice Activity Detection with efficient audio chunk batching & processing.
- Improved Whisper model accuracy from 91% to 98% through spectral gating, denoising, and gain control.

WizViz — Multiplayer AR Wizard Game | *MediaPipe, OpenCV, PyGame* — Feb. 2025
- Built award winning real-time multiplayer AR wizard-duel using OpenCV and PyGame at SpartaHack X.
- Used MediaPipe Pose for skeletal tracking of 2 players on 33 landmarks with sub-20ms at 60 FPS.

TECHNICAL SKILLS

Languages . . . . Python, Java, C/C++, JavaScript/TypeScript, HTML5, CSS3
Frameworks . . . . React, Next.js, Vite, Node.js, Electron, FastAPI, SQLAlchemy, Tailwind
Libraries . . . . TensorFlow, PyTorch, OpenCV, MediaPipe, YOLO, Sentence Transformers
Databases . . . . PostgreSQL, Neo4jÍ, AWS RDS
Cloud & DevOps . . . . . . Docker, Git, CI/CD, AWS (EC2, Lambda, CloudWatch), Google Cloud Platform