

Nithin Jambula

Bachelor of Technology
Computer Science
Vellore Institute of Technology, Andhra Pradesh

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SUMMARY

An enthusiastic and driven machine learning practitioner with hands-on experience in building end-to-end AI systems across domains such as autonomous vehicles, assistive technologies, and deepfake detection. Passionate about neural networks, deep learning algorithms, and transformer-based architectures, with a strong focus on applying these techniques to real-world problems. Proven ability to design scalable ML pipelines, optimize models for deployment on low-power devices, and integrate LLMs in intelligent applications, backed by a solid foundation in research and innovation.

EDUCATION

Degree/Certificate	Institute/Board	CGPA	Year
B.Tech., CSE	Vellore Institute of Technology, Andhra Pradesh	8	2023-27
Senior Secondary	Narayana Junior College	95%	2021-23
Secondary	Vivekananda	99.3	2021

EXPERIENCE

- Air VitAP** Jun 2024 – Present
Researcher Amaravathi, India
 - Designed and deployed an automated voice calling system using ViciDial and Asterisk to promote products across diverse customer segments.
 - Conducted applied research on voice automation, outreach optimization, and real-time customer interaction analysis, blending academic insight with practical deployment.
- Sripto** Dec 2023 – May 2024
Machine Learning Engineer Amaravathi, India
 - Developed a robust Retrieval-Augmented Generation (RAG) system to deliver contextual and real-time answers from private documents.
 - Built AI-driven tools like PDF chatbots, product search matchers, and NL-to-SQL query engines to improve user accessibility and automation.
 - Oversaw deployment, scaling, and integration of backend ML models and frontend interfaces, ensuring end-to-end production readiness.

PROJECTS

- Vulcan: Self-Driving EV Platform (VIT-AP Research Initiative)** Jan 2023 – Present
CARLA • PyTorch • DeepLabV3 • SAC • DAgger • Path Planning
 - Designed an end-to-end autonomous driving pipeline using CARLA simulator and Soft Actor-Critic (SAC) reinforcement learning.
 - Integrated semantic segmentation with DeepLabV3 for scene understanding; implemented low-computation path planning models.
 - Applied DAgger to fine-tune models in dynamic environments, achieving smoother lane alignment and better obstacle avoidance.
 - Deployed optimized model for real-time performance on resource-constrained systems with minimal latency.
- EchoSight: Assistive Navigation Glasses for the Visually Impaired** Dec 2024 – Present
YOLOv8 • Roboflow • Raspberry Pi • GCP • OpenCV • TTS
 - Developed wearable vision-based system for real-time object detection and navigation feedback via Bluetooth earbuds.
 - Fine-tuned YOLOv8 with a custom dataset (50+ object classes), enabling 45+ FPS detection with positional awareness.
 - Integrated spatial direction and distance estimation using monocular vision and depth inference algorithms.
 - Included contextual alerting system with dynamic updates and location-aware voice output for enhanced mobility.

- **WOAT: An intelligent auto-reply bot** Jul 2023 – Nov 2023
Gemini API • Gcloud • Adversarial Testing • Python [🔗][🔗]
 - Built WOAT (WhatsApp Auto-Responder), an AI-powered application that learns user communication styles and auto-generates contextual replies using Google Gemini API.
 - Engineered smart WhatsApp integration with Python + Node.js, including features like contact-based response filters, session persistence, QR-based login, and fallback simple reply mode.
 - Implemented modules for communication tone learning, relationship-based message prioritization.
- **DeepShield: Face-Swap Deepfake Detection Model** Jul 2023 – Nov 2023
CNN • GAN • OpenCV • Adversarial Testing • Python [🔗] – Research Paper Submitted
 - Engineered a CNN-based deepfake detection model, achieving 22% increase in classification accuracy.
 - Created a synthetic video generation tool for data augmentation, expanding dataset variability by 40%.
 - Validated performance using precision-recall and ROC-AUC metrics; reduced false positives by 18%.
 - Conducted adversarial stress tests to evaluate detection robustness under manipulated inputs.
- **NeuroSecAPI: API Vulnerability Detection Framework** Feb 2024 – Apr 2024
Neurosymbolic AI • NLP • OWASP • Flask • Python [🔗]
 - Built a neurosymbolic reasoning engine for detecting API-level vulnerabilities based on request pattern semantics.
 - Increased vulnerability detection accuracy by 34%, improving security posture for data transmissions over APIs.
- **ScreenAutomate: Gesture + Voice Controlled Display System** Oct 2023 – Jan 2024
Python • OpenCV • MediaPipe • SpeechRecognition • Bluetooth [🔗]
 - Developed a hybrid control system enabling users to manage screens using voice and hand gestures within Bluetooth range.
 - Designed for accessibility and remote desktop interfacing; supports hands-free interaction and smart automation.

SKILLS

- **Programming Languages** : Python, SQL, C++, Java
- **Technologies** : TensorFlow, PyTorch, OpenCV, YOLOv8, Hugging Face, LangChain, LLaMA, Scikit-Learn
- **Tools** :MLflow, Roboflow, CVAT, ONNX, Weights & Biases

CERTIFICATIONS

- **Machine Learning - Stanford University, Deep Learning AI**[Certification](#)
- **Deep Learning Fundamentals - IBM**[Certification](#)
- **Machine Learning with Python - IBM**[Certification](#)
- **OVO Object Detection Bootcamp - Google**[Certification](#)
- **Machine Learning Specialist-Advanced -IBM**[Badge](#)

ACHIEVEMENTS

- Awardee in Vikas 2024 Innovation Challenge for 'EchoSight' – a wearable assistive technology solution.
- Winner of Engineering clinics 2024 for novel threat detection framework.

POSITIONS OF RESPONSIBILITY

- **President**, ACS International Student Chapter, VIT-AP Aug 2023 – Present
- **Marketing Member**, SEDS, VIT-AP Jan 2023 – Present