Guna Teja Sarvan Patnaik

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PROFESSIONAL SUMMARY

AI and Machine Learning student with hands-on experience in computer vision, deep learning, and generative AI. Proven track record in developing real-time AI systems, winning hackathons, and delivering 10+ freelance projects. Skilled in Python, TensorFlow, PyTorch, and deployment on edge devices.

EDUCATION

Bachelor of Technology in Artificial Intelligence and Machine Learning **July 2023 - June 2027**
Nitte Meenakshi Institute of Technology, Karnataka, India
Relevant Coursework: Data Structures and Algorithms, Machine Learning, Deep Learning, Computer Vision, Python Programming, C/C++, Java, Database Management Systems

TECHNICAL SKILLS

Programming Languages: Python, C, C++, Java, SQL, JavaScript
Machine Learning & AI: Scikit-learn, XGBoost, LightGBM, TensorFlow, Keras, PyTorch, LangChain
Computer Vision: OpenCV, MediaPipe, YOLOv8, Detectron2, Image Processing
Data Science: Pandas, NumPy, Matplotlib, Plotly, Seaborn, Data Preprocessing
Development Tools: Git, Docker, VS Code, Google Colab, Jupyter Notebook
Hardware & Deployment: NVIDIA Jetson Nano, ROS, Edge Computing, Model Optimization

PROFESSIONAL EXPERIENCE

AI & Computer Vision Engineer Intern **June 2025 - September 2025**
Vithsutra Technologies Pvt. Ltd.

- Designed and deployed real-time computer vision system for automated blood sample classification using YOLOv8 and custom CNN models, achieving 95%+ accuracy
- Integrated object detection pipeline with robotic arm control system using ROS and Python for automated medical sample sorting
- Applied advanced image preprocessing techniques including OpenCV, CLAHE, and morphological transforms to enhance model performance
- Successfully deployed inference models on NVIDIA Jetson Nano for low-latency edge computing applications in medical environments
- Collaborated with cross-functional robotics team to synchronize motion planning, real-time object detection, and mechanical actuation systems

Machine Learning Trainee **June 2024 - July 2024**
Pantechelearning

- Completed comprehensive training program in data preprocessing, feature engineering, and supervised/unsupervised machine learning algorithms
- Gained hands-on experience with industry-standard tools including Pandas, NumPy, Scikit-learn, and Matplotlib for data analysis and visualization
- Built, trained, and evaluated multiple machine learning models for classification, regression, and clustering tasks with performance optimization

- Developed end-to-end machine learning projects demonstrating real-world applications and deployment strategies

KEY PROJECTS

AI-Powered Music Player with Camera-based Instrument Recognition **2025**
Technologies: Computer Vision, OpenCV, TensorFlow, Python, Real-time Processing

- Developed real-time computer vision system detecting musical instruments (piano, drums, guitar) from live camera feed using custom CNN architecture
- Implemented intelligent mapping system to trigger corresponding music tracks based on detected instruments for interactive AI-driven music experience
- Achieved 95%+ instrument recognition accuracy through optimized OpenCV preprocessing pipeline and TensorFlow model inference

Generative AI Content Assistant **2025**
Technologies: Large Language Models, LangChain, OpenAI API, RAG, Vector Databases

- Developed production-ready Generative AI application using LangChain framework and OpenAI GPT API for context-aware text generation
- Integrated Retrieval-Augmented Generation (RAG) architecture with vector database for domain-specific and accurate responses
- Deployed scalable web application enabling advanced text summarization, intelligent Q&A, and creative content generation capabilities

Deep Learning for AI Music Composition **2025**
Technologies: Audio Processing, LSTM, RNN, Generative Models, MIDI Processing

- Designed and trained LSTM-based neural network architecture to compose original music sequences from large-scale MIDI datasets
- Implemented comprehensive audio preprocessing pipeline converting raw audio into symbolic note sequences for learning pitch, tempo, and rhythm patterns
- Generated unique instrumental tracks demonstrating creative applications of deep learning in automated music composition and sound synthesis

ACHIEVEMENTS & LEADERSHIP

- **Top 5 - Mangalore University Cybersecurity Hackathon:** Developed BlockPlot AI, an advanced NLP and RNN-based system for detecting malicious terminal commands with 92% accuracy
- **Top 10 Finalist - HackLoop Hackathon, NMAMIT:** Built Drug Doc, an AI-driven healthcare assistant using advanced NLP and CNN for medical diagnosis support
- **Executive Committee Member - CSI Student Branch NMAMIT:** Led organization of 15+ technical events, workshops, and seminars, managing 200+ participants
- **Active Member - Finite Loop Club, NMAMIT:** Consistently participated in competitive coding challenges and collaborative software development projects
- **Freelance AI Developer:** Successfully completed 10+ projects in artificial intelligence, computer vision, and web applications for diverse clients
- **Open Source Contributor:** Regular contributions to AI/ML repositories on GitHub with 500+ commits and growing community engagement