VIGHNESHWAR KURU

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EDUCATION

Anurag University	**October 2023 - Present [II-II]**
*Electronics And Communication Engineering - **CGPA** - **7.02***	*B.Tech.*

Rishi Junior College	**August 2021 - June 2023**
*Intermediate - **Percentage** - **85.1%***	*TSBIE*

Kothakota Pupils School	**June 2020 - July 2021**
*Secondary School - **Percentage** - **85%***	*CBSE*

TECHNICAL SKILLS

Programming Languages : Python, C, Java, HTML, CSS
ML/Deep Learning : TensorFlow, PyTorch, LLMs, GenAI
Hardware Platforms : Arduino, Raspberry Pi
Tools : Git, Docker, Flutter
Operating Systems : Windows, Linux, macOS

PROJECTS

Mitra – AI-Powered Offline Companion Robot
Sept 2023 – Present

Tools: Python, Ollama (LLM deployment), Speech Recognition (Offline), Raspberry Pi

- Developed a compact, humanoid robot designed for real-world use in environments like car showrooms to assist and advertise autonomously.
- Implemented a completely offline AI chatbot system using local LLMs with Ollama, ensuring privacy and edge-device functionality.
- Currently evaluating between Retrieval-Augmented Generation (RAG) and fine-tuning for conversational AI optimization.
- Focused on enhancing performance and minimizing memory footprint for embedded deployment.
- Filed for a patent covering the system's unique design and application architecture.

Chess AI using Reinforcement Learning
Feb 2024 – Mar 2024

Tools: Python, TensorFlow, Reinforcement Learning algorithms, OpenAI Gym (Chess Environment)

- Implemented policy gradient methods to optimize decision-making, achieving noticeable improvement in mid-game evaluations.
- Created training pipelines with self-play loops, ensuring consistent learning without external datasets.
- Applied reward-based tuning to analyze behavior under varying board states and learning thresholds.

CIFAR-10 Image Classification using CNN
Jan 2024

Tools: Python, Keras, TensorFlow

- Developed a Convolutional Neural Network model for classifying low-res images into 10 categories.
- Implemented dropout and batch normalization, achieving 70% test accuracy.
- Created a lightweight architecture suited for limited computational environments.
- Applied data augmentation to analyze improvements in model generalization.

Fashion MNIST Image Classifier
Dec 2023

Tools: Python, NumPy, TensorFlow

- Developed a dense neural network to classify grayscale fashion images with basic preprocessing.
- Implemented multiple hidden layers to improve feature learning, processing thousands of training images.
- Created an interpretable pipeline for learning model behavior and weaknesses.
- Developed code with modular structure for easy integration into broader AI testing frameworks.

CERTIFICATIONS

AI Foundations *Apr 2025*
HP LIFE

Introduction to Cybersecurity *Jan 2025*
Cisco Networking Academy

ACHIEVEMENTS

1. 3st prize in *Tejas 2k25 Project Expo* for presenting **Mitra, an offline AI-powered robotic companion system** conducted by Anurag University.

2. **Speaker at AU Talks 4.0** organized by *Toastmasters* at Anurag University, sharing insights on storytelling and personal narratives.

3. Performer at *Open Mic 2.0*, showcasing **stand-up and stage presence in a casual creative format**.

4. Winner of *Battle of Brands* organized by *LitraZee Society*, a **debate competition** focused on marketing and strategy.

5. **Organizer & Participant** in *VLSI Hackathon* conducted by the ECE Department, Anurag University, contributing technically and logistically.

6. Patent Filed for **Mitra, an offline conversational AI assistant** built using Python and Ollama, focused on real-world robotic interaction.