Balcha Venkata Parswanadh

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Professional Summary

Innovative and research-driven B.Tech student in Electronics and Computer Engineering at Amrita Vishwa Vidyapeetham, Bengaluru, with a strong foundation in Generative AI, embedded systems, and hardware–software co-design. I specialize in building intelligent, automation-focused tools that enhance productivity and human–AI collaboration—ranging from locally deployed speech-to-text systems to experimental multimodal LLMs. As an active contributor and office bearer of *VYOM*, the college's space-tech club, I blend technical precision with fearless curiosity to transform ideas into working prototypes.

Skills

- **Programming Languages:** Python (Intermediate), C (Intermediate), DSA (Strong)
- **Generative AI:** NLP & LLMs (Strong), Prompt Engineering (Expert)
- **Platform:** Windows, Linux (Intermediate)
- **Hardware:** Arduino, Raspberry Pi, IOT, GPU Compute (Strong), CUDA (Intermediate)
- **Tools:** Docker (Intermediate), Git (Strong), GitHub (Strong)
- **Soft skills:** Teamwork, Flexibility, Communication

Projects

WhisperSTT – AI Speech-to-Text Assistant ***(Mar 2025 – Present)***

- Built a real-time transcription tool using Whisper V3 Turbo, supporting hybrid local/GROQ API modes.
- Designed a Tkinter GUI with hotkey activation and session logging.
- Deployed as a standalone Windows app that pastes transcriptions automatically.

CLI-Tour – Personalized AI Terminal Assistant ***(Aug 2025 – Present)***

- Created a CLI-based LLM assistant to edit and recall projects from the terminal.
- Added memory retention, command logs, and session tagging for personalization.
- Works both online (API) and offline (Ollama) for privacy and flexibility.

Multimodal Adapter Research – LLM + Vision Integration ***(Jul 2025 – Ongoing)***

- Experimenting with GPT-20B and LLaVA-7B to enable image reasoning.
- Designed an adapter + Q-former layer for multimodal embedding alignment.

Raspberry Pi Vision Model – Emergency Vehicle Detection ***(Jan – Feb 2025)***

- Deployed YOLO on Raspberry Pi for real-time emergency vehicle recognition.
- Tuned for low-latency, power-efficient IoT traffic control.

AI-Controlled Robotic Arm ***(Nov – Dec 2024)***

- Built a camera-guided robotic arm that sorts objects via AI classification.

SpinLaunch Prototype – Satellite Launch Simulation (VYOM Club) ***(Oct 2024 – Feb 2025)***

- Designed a spin-based launch prototype demonstrating fuel-efficient orbital insertion.

Education

Bachelor of Technology (B-Tech) in Electronics and Computer Engineering **(July 2024 – Present)**
Amrita Vishwa Vidyapeetham, Bangalore Campus **CGPA: 8.5 / 10**

Andhra Pradesh Board of Intermediate Education **(2022 – 2024)**
Narayana Junior College

Indian Certificate of Secondary Education **(2022)**
Indian Blossoms International School, Ongole