Gokul K.C

CSE (Cyber Security) Undergraduate — MSRIT '27

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Education

Bachelor of Engineering in Computer Science (Cyber Security) **2023 – 2027**
Ramaiah Institute of Technology *Bengaluru, India*

- CGPA: 8.77/10

Technical Skills

CS Fundamentals: OS, Computer Networks, DBMS, DSA, Computer Architecture
Programming: Java, Python, JavaScript, C/C++
Web & Backend: React, Node.js, Express, MongoDB, REST APIs, Socket.io
Systems & DevOps: Linux, Git, Docker, GCP
IoT & Hardware: TinyML, Raspberry Pi, ESP32, LoRa Modules, Sensor Integration
ML / AI: TinyML, Model Optimization (Quantization, On-device Inference), TensorFlow Lite
Security Tools: Metasploit, Nmap, Wireshark, Burp Suite

Projects

FarmAssist: Intelligent Remote Farm Management and Decision Support System Powered by IoT

- Tech Stack: React, Node.js, Express, MongoDB, Raspberry Pi, ESP32, LoRa, TinyML
- Designed and implemented an edge–cloud smart agriculture platform using ESP32 + TinyML + LoRa + Raspberry Pi, enabling real-time farm condition monitoring with ¿90% on-device classification accuracy and sub-50 ms inference latency in low-connectivity environments.
- Built a scalable web-based decision support system integrating IoT sensor data, weather forecasts, market price APIs, and AI-driven recommendations, reducing water wastage by 35% through data-driven irrigation strategies.
- Developed a multilingual AI advisory interface (English, Hindi, Kannada, Tamil) with secure JWT-based authentication, real-time dashboards, and remote irrigation control for small and marginal farmers.

Harmonica Tab Generator — AI-Powered Audio-to-Music Notation Converter

- Tech Stack: Python, Flask, PyTorch, Librosa, Demucs, TorchCrepe, HTML/CSS/JavaScript
- Built an AI-driven audio transcription pipeline using PyTorch, Demucs, and TorchCrepe to extract melodies and convert audio into playable harmonica tablature.
- Developed a Flask-based full-stack web application enabling users to upload MP3/WAV/M4A files and receive automated harmonica tabs with blow/draw notation.
- Applied DSP techniques using Librosa and SciPy for pitch detection and note mapping across multiple harmonica keys.

Personal Learning & Productivity Operating System

- Tech Stack: React, FastAPI, PostgreSQL, Ollama (LLM-Assisted Evaluation)
- Built a closed-loop personal learning system using adaptive testing, knowledge-decay modeling, and confidence-calibrated assessments to ensure deep understanding.
- Developed a fake-learning detection model using behavioral signals (time-on-task, accuracy trends, confidence–performance gap, retention decay) to identify ineffective study patterns.
- Engineered an adaptive goal-to-capability planning engine that dynamically recalculates learning roadmaps based on knowledge gaps and execution drift.

Certifications

NPTEL Database Management Systems Certification: IIT/IISc Platform
Artificial Intelligence A-Z: Hadelin De Ponteves, Kirill Eremenko (Udemy)
Jr Penetration Tester: TryHackMe

Achievements

- Solved 160+ DSA problems across LeetCode and GeeksforGeeks
- Designed a remote irrigation control system to automate and remotely manage farm irrigation operations