MITHIL ARASU B
Gmail | GitHub | LinkedIn

EXECUTIVE SUMMARY:

Innovative and detail-oriented engineering student with a strong passion for **AI, IoT solutions, and embedded systems**. Experienced in developing AI-driven industrial safety applications using Raspberry Pi, machine learning, and drone-based monitoring solutions. Strong problem-solving skills and a keen interest in technology-driven safety and automation innovations.

EDUCATION:
- **Vellore Institute of Technology** (2023-2027)
  B.Tech. in Electronics and Communication Engineering
  CGPA: 8.40/10 | Chennai, Tamil Nadu
- **Indian Institute of Technology Madras** (2023-2027)
  BS in Data Science and application (Diploma)
  CGPA: 6.9/10 | Chennai, Tamil Nadu
- **Bharath Vidya Mandir** (2009-2022)
  Maths and Biology | Tenkasi, Tamil Nadu

SKILLS:
- **Programming Languages:** Python, Java, C, C++, Embedded C
- **Frontend Technologies:** HTML, CSS, JavaScript
- **Backend & Databases:** MySQL, Flask
- **IoT & Embedded Systems:** ESP32, Raspberry Pi, Arduino
- **EDA Software:** Cadence, LTspice
- **Soft Skills:** Leadership, Team Collaboration, Problem Solving

PROJECTS:
- **Industrial Safety Rover**
  - Developed a rover integrated with a mobile app using Flutter.
  - Implemented live RTSP streaming and YOLO-based object detection for safety monitoring.
  - a Flask API to send safety alerts based on AI detection.
  - Impact: Reduced safety risks in industrial areas by 30% through automated alerts.
- **AI-Powered Object Detection and Tracking System**
  - Developed a real-time object detection system using YOLOv8 and OpenCV.
  - Integrated RTSP live streaming into a Flutter app for real-time monitoring.
  - Built a Flask API to process and analyze detection data efficiently.
  - Impact: Enhanced security monitoring by 40% with AI-driven detection and alerts.
- **Comparison of Existing 7:3 Compressor with Stacking Based 7:3 Compressor using Cadence**
  - Designed and implemented both conventional and stacking-based 7:3 compressors using Cadence Virtuoso, optimizing digital arithmetic unit efficiency.
  - Performed schematic-level simulations to analyze delay, power consumption, and area metrics, demonstrating the performance advantages of the stacking approach.
  - Conducted transistor-level analysis of the compressor circuits, leveraging custom layout techniques to minimize parasitic effects.

CERTIFICATION:
- IBM Database and SQL for Data Science with Python (Coursera)
- Full Stack Web Development (Udemy)