# MADHANKUMAR K

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MadhanKumar22it27

## EDUCATION

### Bachelor of Technology
**KGiSL Institute of Technology**
2022 - 2026

**HSC**
**The Suburban Higher Secondary School**
2021 - 2022

**SSLC**
**The Suburban Higher Secondary School**
2019 - 2020

## TECHNICAL SKILLS

- Python (OOP and DSA)
- ML and DL
- HTML, CSS and Bootstrap
- Java (OOP and DSA)
- Flask
- MySQL
- Git and Github

## SOFT SKILLS

- Strong critical thinking
- Effective communication
- analytical problem solving
- fast learning ability
- consistency in delivering high-quality results

## LANGUAGE

- English (Proficient)
- Tamil (Native Speaker)

## PROFESSIONAL SUMMARY

Results-oriented Software Developer with a proven track record of delivering high-performance, scalable, and low-latency applications. Proficient in Python, Java, Flask, and MySQL, with hands-on experience in AI, machine learning, and real-time systems. Skilled in writing clean, testable code, REST API design, and building CI/CD pipelines. Experienced in Agile environments, passionate about solving real-world problems with efficient system design and clean architecture.

## PROJECTS

### Currency Detection for the Visually Impaired

- Created a lightweight CNN model to identify Indian currency notes with high accuracy.
- Utilized MobileNetV2 to ensure efficiency and low memory usage on mobile devices.
- Designed with a focus on accessibility to assist visually impaired users.

### Real-Time College Bus Tracking System

- Engineered a real-time, high-availability location tracking system supporting 10+ buses and 100+ students, using Leaflet.js, Flask, and MySQL.
- Implemented a secure, low-latency login system with role-based access and real-time ETA countdown (5-second refresh rate).
- Enhanced system reliability to handle high-traffic student interactions efficiently.

### Issue Tracking System

- Built a web-based issue management system with Python Flask backend and MySQL database serving 500+ tickets with minimal latency.
- Integrated priority-based filtering and real-time status updates, improving issue resolution time by 30%.
- Focused on scalable architecture supporting multiple concurrent users with high system uptime.

### Smart Traffic Light Control System — AI Project

- Designed a smart, adaptive traffic control system using YOLOv8, achieving 92% detection accuracy for real-time traffic analysis.
- Integrated multi-sensor inputs (emergency vehicles, weather conditions) for dynamic traffic optimization.
- Deployed on Raspberry Pi 5, tested over 50+ simulation scenarios, ensuring low-latency decision-making for critical infrastructure.

# Experience

**CodeAlpha** **July 2025 - August 2025**

**Machine Learning Intern**

- Built and trained 8+ machine learning models for classification and regression using Python and Scikit-learn.
- Performed data preprocessing, feature engineering, and exploratory data analysis (EDA) on 10,000+ data points to improve model performance.
- Collaborated with the data science team to optimize model metrics (accuracy up to 92%, $R^2$ up to 0.88) and implemented improvements using TensorFlow.

# Achievements

- **1st Place** – Hack Beyond Limits, 24-hour hackathon
- **5th Place** – AWS Deepracer 2024
- **3rd Place** – Social Good Ideathon, among 35+ teams
- **Special Achiever's Award** (2024–2025) for active participation in technical workshops and inter-college events

# Interests

- Math puzzle solving
- Cricket
- Badminton
- Explore New Places
- Cooking