Project Design Phase-I

Proposed Solution

Date	18 October 2023
Team ID	Team - 592813
Team Members	Sugandhi Ninad Nilesh Aadhith M
Project Name	Project - AI Enabled Car Parking System using OpenCV
Maximum Marks	2 Marks

S. No.	Parameter	Description
1	Problem Statement (Problem to be solved)	• Urban congestion and the increasing number of vehicles have led to a critical issue of parking space scarcity. • Drivers face challenges in finding available parking spots efficiently, leading to wasted time, heightened stress, and increased traffic congestion. • Parking facility operators struggle to optimise space utilisation and enhance customer satisfaction due to a lack of real-time data and guidance systems.
2	Idea / Solution description	• The system will employ computer vision algorithms to monitor parking spaces in real-time. • Using cameras strategically placed in the parking facility, the system will detect and analyse available parking spaces. • Drivers will have access to a user-friendly web application. The website will provide real-time information on vacant parking spots and guide drivers to the nearest available spot, optimising their parking experience.

3	Novelty / Uniqueness	• Real-Time Accuracy: Utilising OpenCV algorithms for real-time detection ensures accuracy and reliability in identifying available parking spaces. • User-Friendly Interface: The web application provides an intuitive interface for drivers, offering real-time updates and navigation, enhancing user experience.
4	Social Impact / Customer Satisfaction	• Reduced Stress: Drivers experience reduced stress and frustration, as they can quickly find parking spaces, leading to improved overall well-being. • Environmental Impact: By reducing the time spent searching for parking, the system contributes to reduced emissions and a greener environment. • Improved Traffic Flow: Optimised parking reduces congestion and improves traffic flow, benefiting the entire community.
5	Business Model (Revenue Model)	• Subscription Model: Parking facility operators can charge a subscription fee for access to the AI-enabled system, offering different plans based on the level of service and features. • Partnerships: Collaborate with local businesses and municipalities, offering customised parking solutions and revenue-sharing models to create sustainable partnerships.
6	Scalability of the Solution	• API Integration: Provide APIs and SDKs for third-party integration, allowing the system to be integrated into existing parking management software and IoT devices. • Cloud-Based Solution: Utilise cloud infrastructure for scalability, enabling the system to handle a growing number of users and parking facilities without significant hardware investments.