

Perfect Parking, Web application & Car Park Monitoring with OpenCV

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Technology Used



Introduction

Due to an increase in in the number of cars being used in limerick city and other cities in Ireland, finding a solution to car parks has now become vital. The old-fashioned way of parking was that everyone would just leave their cars parked in the streets until they were needed again, this however caused major traffic congestions in towns and cities. Shop owners also got hugely impacted as there wouldn't be enough room for staff to park no mind the customers looking to go into their shops which was damaging for their business, it is undeniable that car parks are a very important factor in society, by having parking spaces it reduced illegal parking which would have increased congestions on the road and increasing travel time.

Aim and Objectives

The aim of my project is to create a parking system that will replace the outdated systems and to help stop the widespread problem that is parking in our cities. My goal is to improve the effectiveness of finding parking spaces and to also relieve the stress of the users looking for parking by implementing new and innovative features.

Primary Objectives:

- Sourcing car parks.
- Building the Perfect Parking web application.
- Building the monitoring system with OpenCV
- Testing the website to insure its user friendly.
- Testing the parking monitors capabilities and how it could expand in the future.

Results

From doing some testing I finally concluded that the parking monitor works how it should, It gives a probability percentage of how many parking spaces are available in the monitored car park.



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Conclusion

I conducted research on the issue of car parking in Limerick City and developed a parking monitoring system using OpenCV and a web application called "Perfect Parking" to help users find and favourite parking spaces. Testing confirmed that the system worked effectively and provided a probability percentage of available parking spaces. The project's primary objectives included sourcing car parks, building the monitoring system, and testing the website for user-friendliness. My aim was to create an innovative parking system to replace outdated ones and alleviate the stress of finding parking spaces in cities. The importance of parking spaces in reducing illegal parking and traffic congestion is a must, and the project seeks to address this growing issue in Limerick City and other cities in Ireland.

Methods

- Researched about the problem that was car parking in Limerick City.
- Done research on OpenCV and vehicle recognition.
- Looked into other parking businesses and applications to see if this idea was done before.
- Developed my Car Parking monitor.
- Monitor a car park to get back the probability of a parking space being available.
- Developed my Perfect Parking web applications so users can find and favourite a car park that they prefer.

