

Smart Parking Plaza with Fare Calculation using Li-Fi Technology.

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ABSTRACT

In this modern era, with the elevate in population there is need to increment the conveyance. As the number of conveyances are consistently incrementing, but parking space is becoming a major quandary in metro cities. By utilizing automation system, we may develop astute parking system for the quandaries such as rush, manual work, lack of space, wastage of time in search of congruous space, unfair economy, etc. This research paper will avail to find the solution for above quandaries utilizing Li-Fi technology.

Key Words - Automation, Li-Fi technology, Perspicacious Parking, Fare Calculation, Arduino

Introduction:

An Automatic car parking system is an astute parking system which will play a consequential role to reduce traffic in the city. This system withal avails to reduce the time consumption for probing the space as well as to calculate plausible amount of parking utilizing LIFI technology An Automatic car parking system is an astute parking system which will play a consequential role to reduce traffic in the city It shows the concept of automation were the cars are automatically sensed at the ingress and exit of parking were the LCD exhibit will avail to show the free space available for parking as well as the calculation from the instant the car takes any space.

LITERATURE SURVEY:

The perspicacious parking system implemented mainly in the Europe, Cumulated States and Japan is developed with the incorporation of advanced technologies and researches from sundry academic disciplines. Now-a-days, there is a rapid magnification in parking system. Manpower is needed for each car parking slot to cull a parking slot manually and give direction to drive congruously into slot. So, there is a desideratum to develop an automatic parking system which will reduce manual work as

well as will be subsidiary for conscientious parking of cars and other conveyances. Parking system routinely experience parking cognate challenges, especially in the urban and metropolitan areas.

In paper “Automatic parking slot detection predicated on around view monitor(AVM) systems” by Changle Li in 2016 IEEE international conference on mechatronics and automation have proposed this system utilizing Around View Monitor(AVM). In their paper they have discusses fusion of AVM and ultrasonic sensor, used to detect the vacant parking slot in the automatic car parking system. The AVM provides a virtually 360 degree scene of the car in bird’s ocular perceiver view. Through the bird’s ocular perceiver view, a driver can check for obstruction around the conveyance. First, the parking slot marking detected in the AVM image sequence. A tree structure-predicated method detect the parking slot marking utilizing individual AVM image sequence and image registration technique. Second, empty slot is detected utilizing ultrasonic sensors. The probability of parking slot occupancy is calculated utilizing ultrasonic sensor data acquired while the conveyance is passing by parking slots, and determinately the culled empty slot is tracked and the conveyance is opportunely parked in culled parking slots.

M. Masmoudi “An astute car like robot parking system design and implementation utilizing FPGA”, 2005 endeavors to discuss this system utilizing FPGA Technology. In their paper they have discuss how to implement an automatic car parking system utilizing FPGA technology ,where the access in the parking which is made by barrier, if there are vacancies with the hoisting of the barrier a ticket is issued with a client code and there commences a timer for quantifying the time left in the parking. The analog signals transferred through a digital analog converter as input signals in the FPGA. To work with FPGA Xilinx software has to be used.

In paper “RFID predicated automatic parking system” by Prabhakaran N. in Feb 27, 2016 have discussed this system utilizing RFID .According to their system, the conveyance owner has to first register the conveyance with the parking owner and get the RFID tag. When the car has to be parked, the RFID tag is placed near the RFID reader, which is installed near the ingress gate of the parking lot. As anon as the RFID tag is read by the reader, the system automatically deducts the designated amount from the RFID tag and the ingress gate boomer opens to sanction the car inside the parking area. Concurrently, the parking counter increments by one. Similarly, the door is opened at the exit gate and the parking counter decremented.After doing study on sundry system utilizing sundry technology, we have endeavored to discuss a system utilizing Light Fidelity technology(Li-Fi),Infrared(IR)sensors, Microcontroller., as Li-Fi is ideal for high density wireless data coverage inside a confined area or room and is liberate from interference issues.

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