



Green Car Park

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How Far Do We Really Drive While Looking for Parking?

HOME » MOTORING » MOTORING NEWS

by Bob Glatz | Mar 19, 2015 | News

Motorists spend 106 days looking for parking spots

"Studies suggest that up to 30% of downtown drivers may just be looking for a place to park their cars.

The typical driver spends 106 days of their life searching for a parking space, according to a new survey.

average time a driver spent hunting for parking was 3.3 min



covered was a half-mile. That means that over the course of a year, the search for parking around just the Los Angeles campus would add up to 950,000 miles of travel, along with 47,000 gallons of wasted gas and 730 tons of greenhouse gas emissions. "In a day, the amount of cruising was more than the distance across the U.S.,"

"If we can **cut the time** it takes drivers to find a parking spot by even a fraction, **the difference in our carbon footprint is meaningful**. And, that's what many new technologies are making possible."

Casey Jones, chairman of the International Parking Institute (IPI)



Problem Statement

- “Cruising and idling cars while finding parking spots pose a serious yet forgotten environmental problem. They waste fuel and drivers’ time in the process”

Data

- Idling Fuel Consumption
- 3.3 minutes wasted on parking
- Fuel Consumption = 0.15 Gal/hr
- More than 600.000 cars in Singapore

THAT IS 90,000 GAL WASTED PER HR!!!!!!

Aim

- Problem: Convenience; Reduce fuel consumption; Reduce greenhouse gas emissions; Reduce probability of accidents



- Cheap and easy to install system

- Integrate into Carparks and UI



- Priority spots can be assigned, priority carsetc

- Obsolete carpark gantry

- Viable product



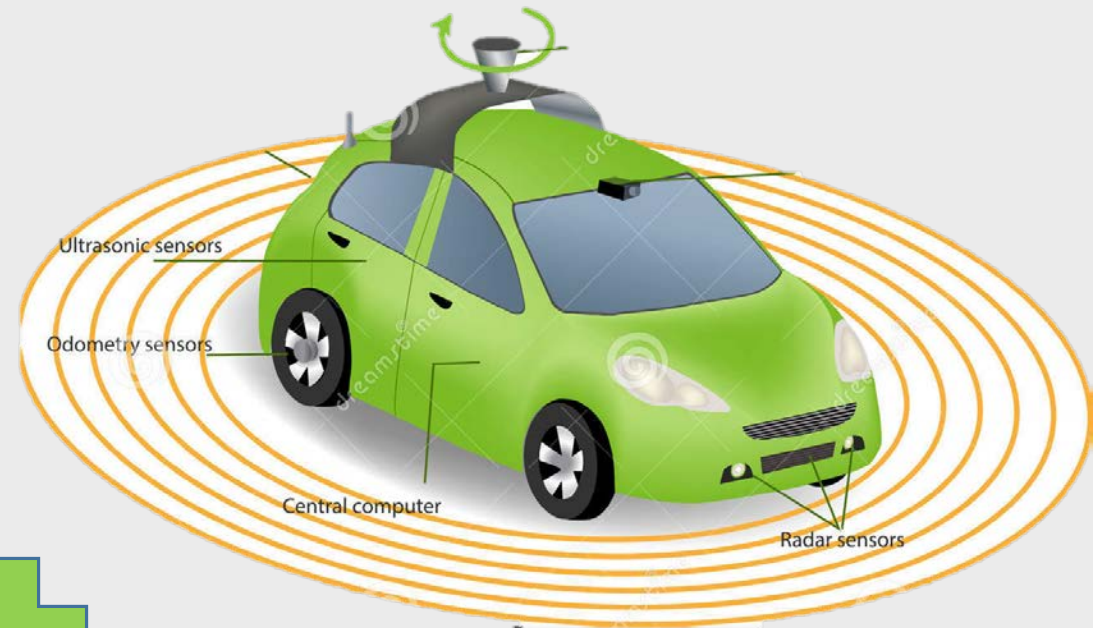


Ideation

- “To design a smart automation system that is aimed to reduce the carbon footprint produced by cars while idling”
- Other ideas:
 - Device that records daily capacity
 - Machine learning
 - Smart Car

Proposed Solutions

Optimized Parking System Models:
Autonomous Car



Proposed Solution

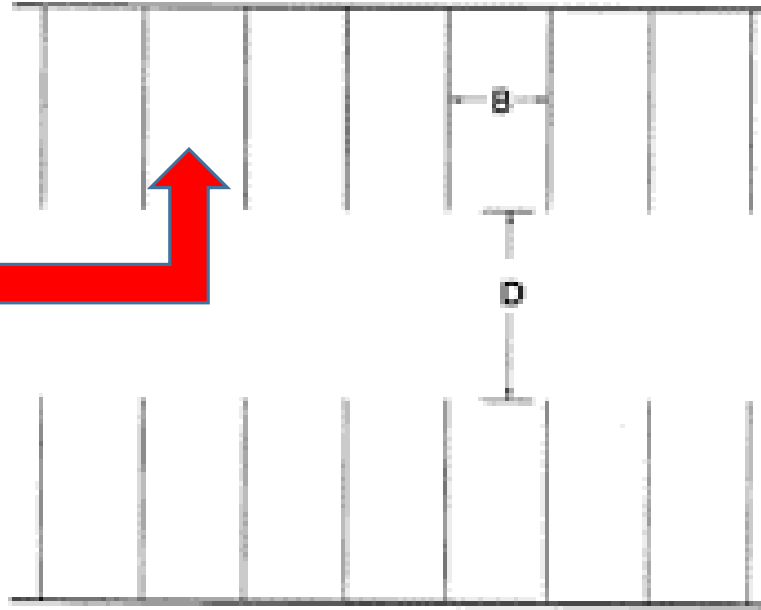
Optimized Parking System Models: Smart Car-Park (Line-Tracing)

(Figure 4)

PARKING LAYOUT DIMENSIONS
AT 90 DEGREE ANGLES
(MINIMUM STANDARDS)

A	B	C	D
90°	8.5	18.0	24.0
	9.0	18.0	22.0
	10.0	18.0	20.0

A = Stall Angle
B = Stall Width
C = Stall Length
D = Aisle Width



Optimized Parking In Singapore

“b) Smart Car Parks

Each car park will have an **intelligent parking demand monitoring system** that will automatically increase the number of available lots during non-peak hours for visitors, as residents with season parking ticket (SPT) are out. Conversely, it will also reduce the number of available lots for short-term parking visitors in the evening, to ensure sufficient lots are reserved for residents with SPT returning home.”

(hdb.gov.sg, 2017)

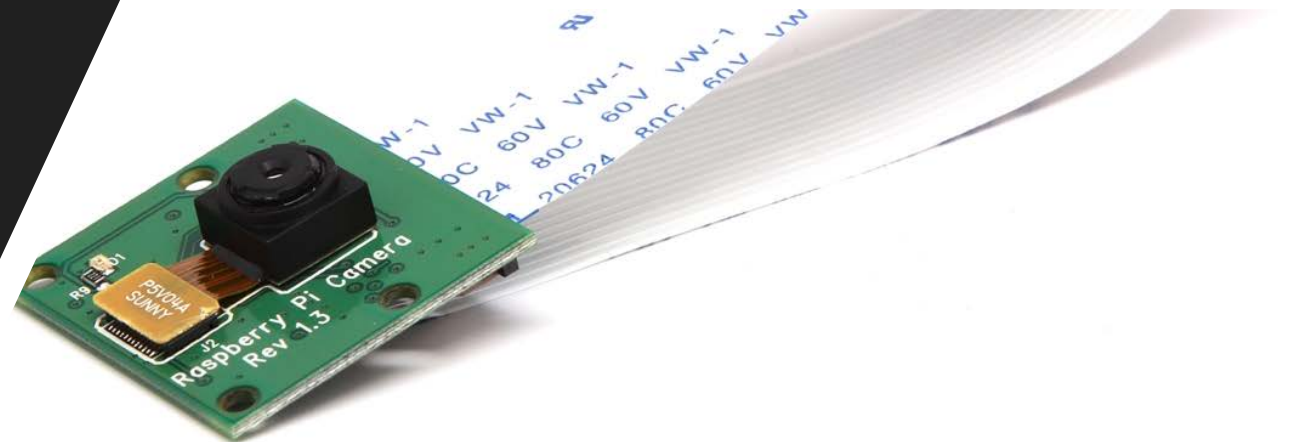
The Plan

Utilization of the sensors readily available in E-bot and Raspberry Pi

- Ultrasonic Sensors
- Light Sensors
- IR Sensors

Possible sensors to add for Raspberry Pi

- Display Module
- Camera Module
- LED Strips



Budget Plan

01

Camera
Module

-S\$29.95

02

Interface
Module

-S\$-

03

LED Strips

S\$5.00

04

Miscellaneous

S\$5.00