**Reducing the Time to Find a Parking Lot in Smart Urbanism**

**Introduction**

These days, most people live in the urban areas. Currently, about half of the world's population is said to live in urban areas and is expected to increase to 68 percent by 2050. [1]. As the world's population increases, the frequency of finding empty parking spaces is decreasing significantly. Especially, In densely populated areas, finding a free parking spot is challenging for drivers. As a result of massive rural exodus, cities were forced to optimize their urban resources due to the continuous growth of urban populations. In this sense, Smart cities are emerged by the help of information and communication technologies (ICT) [2]. A smart city is a city that collects information and uses ICT to improve people's lives.[3]. Smart cities are a growing trend around the world. In order to improve the quality of life of its citizens and their interactions with government officials, they aim to integrate ICT solutions. One of the biggest issues with urban development is traffic and urban mobility. With increasing parking demand and a limited capacity of the city's transport, traffic and parking systems, they face many challenges of sustainable mobility. Smart cities emphasize several issues that are rooted in sustainable development, which aims to make them more attractive, eco-friendly, and economically efficient. At present, some smart tools assist motorists by reporting events like traffic congestions, accidents, or even road conditions [4]. As a result of the population growtth, large number of vehicles are being produced, which makes parking and even navigating traffic more difficult in light of the problems with sustainable development [5]. Thus, it can be difficult for drivers to find a free parking spot for their vehicle in a heavily crowded region. It is a major issue because drivers spend an average of 20 munites or more looking for a parking space [6]. It causes spending more fuel and the fuel’s damage to the environments. In traditional parking, spaces are found by luck and experience, which waste time and fuel. In this situation, having advance knowledge of the parking places that are available would solve this issue. There aren't many options that provide parking space occupancy data, but those that do usually do not deal with the planning challenge of how to maximize your chances of finding a free parking space. One of those example that adjusts parking prices based on occupancy and displays live occupancy and price information [7]. The best tools for accurately forecasting this availability would be using machine learning techniques [8]. A smart parking system can be created by the help of some concepts like IT or IoT. Nowadays,they are becoming our eyes and ears in cities. There is this example which is a simple solution in parking known and used for many years in Korea [9]. They benefit from balloons which is called “Here balloon”. They set up here balloons for each parking space and it falls when a car parks in and rises when the car exists. This method helps drivers to save time and oil. So, imagine a model that placing smart wireless sensors that uses IoT with some help of mobile applications which can entegrate sensor information into navigation systems so drivers can be guided to empty parking spots effectively. So, this parking system is combination of tradional korean system used in Seoul. This paper aims at going a step further and proposes a model that gives occupancy information that guides a driver to maximize the chance of finding a free parking space faster. The use of smart parking systems lessens the need to look for a free park space in urban areas with busy traffic. It shortens the time spent looking.

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life is too short to spend your precious time on parking