

INTISARI

Kendaraan bermotor milik pribadi masih menjadi moda transportasi utama yang digunakan sebagian besar penduduk negara Indonesia. Seiring bertambahnya jumlah kendaraan bermotor, bertambah pula kebutuhan berbagai infrastruktur yang mendukung penggunaannya, termasuk fasilitas lahan parkir *indoor* yang kerap disediakan dalam setiap bangunan.

Dalam fasilitas parkir *indoor*, masih terdapat beberapa kendala yang menghambat efisiensi penggunaannya, antara lain belum tersedianya informasi ketersediaan lahan parkir yang masih kosong pada setiap lantai. Untuk itu, pengemudi diharuskan untuk secara manual mengecek ketersediaan lahan parkir tersebut, yang tentunya kurang efektif, karena selain menghabiskan waktu pengemudi dan menghambat aliran kendaraan dalam lahan parkir *indoor* tersebut, hal ini dapat pula menimbulkan pemborosan bahan bakar yang emisinya berpotensi menyumbang efek negatif terhadap perubahan iklim global.

Penelitian ini akan menghasilkan sistem parkir cerdas berbasis *Internet of Things (IoT)* yang dapat mendeteksi keberadaan dalam lahan parkir dan membedakannya dari objek lain. Informasi tersebut kemudian dikirim ke basis data pada server dan ditampilkan kepada pengguna lahan parkir berupa informasi visual yang menunjukkan ketersediaan lahan parkir dalam bangunan.

Kata Kunci: *Internet of Things*, deteksi kendaraan, sistem parkir cerdas dalam bangunan

ABSTRACT

As of late, privately owned vehicles still holds the position as the staple of transportation for the majority of people, especially in the country of Indonesia. The steadily rising number of vehicles also bring about some problems, namely the infrastructure necessary to support its usage, one of them being the parking facility, especially those that are built inside buildings in the urban area.

There are many flaws that can still be seen in the conventional indoor parking facility, one of them being the lack of information provided to the drivers about parking space availability that are present in each floor of the parking facility. This proves to be detrimental to the overall effectivity of the parking process, and directly impact the traffic density in the surrounding area, and can even contribute to the carbon footprint that are being released to our environment ant thus harming our planet's ecosystem

This paper would explain the design process of a vehicle detection system based on Internet of Things (IoT) technology, that would allow us to detect and differentiate vehicles that are present in a parking space, and then transmitting the information wirelessly to a database that resides in an online web server. This system is designed to be a part of a larger smart parking framework that would allow drivers and parking lot manager alike to use indoor parking spaces more efficiently.

Keywords : *Internet of Things, Car Detection, Indoor Smart Parking System*