

# DEVELOPING A PARKING SLOT BOOKING APPLICATION USING AUTOMATIC LOCATION PLATE RECOGNITION VALIDATION

**AGIL GHANI ISTIKMAL**

*Program Studi Informatika, Fakultas Sains & Teknologi*

*Universitas Teknologi Yogyakarta*

*Jl. Ringroad Utara Jombor Sleman Yogyakarta*

*E-mail : agilistikmal3@gmail.com*

## ABSTRACT

During holidays or special events at shopping centers, parking areas become more congested than usual, making it difficult for visitors to find available spaces. To address this complex parking challenge, this study developed a system for booking parking slots combined with automatic license plate recognition validation. This smart parking system helps visitors locate vacant parking spaces or even make online reservations before arriving. It is built using a microservice architecture, separating the main backend (written in Golang) from the camera and speaker sensor modules (developed in Python). These modules utilize computer vision and OCR techniques to read vehicle license plates, detect parking availability, and validate parking reservations. Through a web application (NuxtJS) or a mobile app (Expo), users can make online reservations with cashless payments via Xendit and access real-time parking availability information. Test results demonstrate that integrating automatic booking with license plate validation significantly reduces visitor waiting times when searching for parking spaces.

**Keywords:** Parking System, Parking Slot Booking, License Plate Recognition, OpenCV, EasyOCR