

## An Intelligent WSN-Based Parking Guidance System

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**Abstract :** This paper designs an intelligent guidance system, based on wireless sensor networks, for efficient parking in parking lots. The proposed system consists of a parking space allocation subsystem, a parking space monitoring subsystem, a driving guidance subsystem, and a vehicle detection subsystem. In the system, we propose a novel and effective virtual coordinate system for sensing and displaying devices to determine the proper vacant parking space and provide the precise guidance to the driver. This study constructs a ZigBee-based wireless sensor network on Arduino platform and implements the prototype of the proposed system using Arduino-based complements. Experimental results confirm that the proposed prototype can not only work well, but also provide drivers the correct parking information.

**Keywords :** Arduino, parking guidance, wireless sensor network, ZigBee

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