

IOT-BASED BIRD FEED MONITORING AND CONTROL SYSTEM WITH DYNAMIC WI-FI CONFIGURATION

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ABSTRACT

Technological advancements have provided significant benefits to humans across various fields, particularly in monitoring and feeding pets and livestock. Several researchers have developed monitoring and feeding systems utilizing Internet of Things (IoT) technology. However, the current Wi-Fi configuration is hardcoded into the program, which limits the device's flexibility as it cannot select the network directly. Researchers propose enhancing the monitoring and feeding system by incorporating dynamic Wi-Fi configuration features and utilizing push notifications when the device is disconnected from the network. This system also facilitates communication between IoT devices and servers using the MQTT protocol, while mobile applications connect to the server via WebSocket and REST API. This research was conducted through several stages, including literature reviews, system design, implementation, and testing. The experimental findings demonstrate that the configuration of Wi-Fi on the ESP32 can be executed dynamically via a web page, thereby facilitating the seamless transition of devices between networks. Furthermore, the mobile device application successfully received data from the server, displayed information on the interface, and controlled the device with commands sent via WebSocket and REST API. The implementation of this system is expected to enhance monitoring and feeding efficiency.