Automatic Identification and Categorize Zone of RFID Reading in Warehouse Management System

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ABSTRACT

Radio Frequency Identification (RFID) technology has improved the operational efficiency and process flow in the distribution of warehouse management system (WMS) around the globe. Nonetheless, a moving or missing tag as well as known and unknown tag's location that may occur in the detection could reduce the efficiency of process flow. This study aims at identifying the location of goods in between two RFID reading zones by means of machine learning, particularly Support Vector Machine (SVM). A total of seven statistical features are extracted from the received signal strength (RSS) value from the raw RFID readings. SVM classifier are evaluated by considering the combination of different statistical features namely COMBINE to produce a more effective classification in comparison to individual statistical feature. The performance of the classifier demonstrated a classification accuracy of approximately 94% by considering all features whereas the performance of the classifier by considering individual features alone is below than 90%. This preliminary study establishes the applicability of the proposed automatic identification is able to provide the management of goods as well as supply chain reasonably well without human intervention.

KEYWORDS: Radio Frequency Identification (RFID); warehouse manage-ment system (WMS); Biomechatronics; Rehabilitation engineering; Intelligent systems; Sensors and actuators

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