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3D-Camera Inventory Management System

C. Hwang and J. Park

Department of Industrial Engineering/Automation System Research Institute
Seoul National University
Seoul, South Korea

Corresponding author's Email: chhwang21@snu.ac.kr

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Abstract: Inventory management has been treated as an important subject in the manufacturing industry. There are many kinds of technologies and research using barcode and RFID (Radio Frequency identification) technology. But, most inventory warehouses check their real inventory once or twice a year in order to find calculate differences from the online inventory. To reduce this kind of effort and cost, we need a new system using other technology.

Because of this reason, this research will suggest a new inventory management system using Deep Learning, the Support Vector Machine, and 3D-Camera technology. Research consists of three main parts. First, the 3D-Camera acquires the color of the inventory color and picture of the depth. Second, it finds the inventory type using Deep-Learning and Support Vector Machine technology. Third, the system counts the inventory quantity using depth data. This research includes some constraint conditions and assumptions. But it can be useful in real-life industry. By completing this process, we will be able to make sure that the real inventory amount and the inventory amount online correspond at all times.

Keywords: 3D-Camera, Deep-Learning, Convolutional Neural Network, Image Process, Inventory Management.