COFFEE BEAN DEFECTIVE TYPE DETECTION SYSTEM USING LEARNING VECTOR QUANTIZATION ALGORITHM

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ABSTRACT

Coffee is one of the most popular drinks. The development of coffee in Indonesia experienced a pretty rapid increase in production. In 2016, coffee production reached around 632 thousand tons, and in 2017 coffee production was around 636.7 thousand tons, an increase of about 0.74%. Robusta coffee is the type of coffee that supplies most of the world coffee trade. Apart from having a different taste, Robusta coffee also has a different shape the coffee beans. Most coffee shop traders and entrepreneurs do not know the difference. To avoid the wrong choice of coffee beans, software that can be applied is needed to help differentiate types of coffee based on the shape of the coffee beans. In certain conditions, humans cannot determine the type of coffee bean defect properly, such as when they are sick or tired, which results in inaccurate determination of the type of defect—other conditions such as problems with the human senses such as colour blindness. The research aims to find a system that can detect the type of coffee bean defect using the Learning Vector Quantization algorithm with the RGB colour model features. In this study, the system detected coffee bean defects with the highest classification accuracy of 80 % with Epochs 150 and a Learning Rate of 0.01.

Keywords: Coffee, Detection System, Learning Vector Quantization.