ABSTRACT

In this study, the automation of computer vision-based inspection process proposed in the Department of Quality Control of Incoming Leather (QCIL) in PT. Karyamitra Budisentosa, a manufacturing company that produces shoes with leather as the products major raw material. PT. Karyamitra Budisentosa, implement strict quality control, especially in the incoming leather inspection before further processing that takes place in the Department QCIL. Major concern in the inspection process is the leather surface quality. Leather surface needs to be free from any defects that relatively have small dimensions, which the defects are generally caused by livestock environmental factors. Manual inspection performance that gives 65% of the average accuracy rate in 240 seconds average time, that affect on the escalation of backtrack and cost level, can be improved by implementing automated inspection based on computer vision on the leather surface inspection process. This study proposes a computer vision-based inspection systems using Artificial Neural Network (ANN) as the artificial intelligence. The implementation of computer vision by utilizing ANN as machine learning is proposed for leather, as the research objects are high in morphology and geometric variance compared with other objects that applicable on traditional recognition in computer vision. The results of this study concluded that the average accuracy of inspection can be increased to 72.2% in 77 seconds of average processing time.

***Keywords**: Visual Inspection, Computer Vision, Neural Network*