

## ABSTRACT

Today, the trend phenomenon in the world of business and commerce is e-commerce, which one example of its business applications is the online shopping. Goods that are bought and sold on the online shop are the items that need to be smelled, handled, and tasted, like fresh meat. One drawback of online shopping is a more greater risk of fraud to be received by the consumer. Fraud was committed by the manufacturer by lying or falsifying the type and quality of goods offered to be a problem that often occur at this time.

This Final Project aims to implement the science of Digital Signal Processing (DSP) by building a software-based system that can identify the type and quality of meats consumption by detecting an image of the meat into the system. The images would be extracted it features by *Curvelet* transform, and also recognition of these features by *k-Nearest Neighbor (k-NN)* method.

From the results of performance testing system, it is known that the performance of the system reaches the highest accuracy when the feature extraction process using *Curvelet 5* scale 16 orientation with the parameters set out in the classification of *k-NN* are the value of  $k = 3$ , the 'City Block' distance, and the 'Nearest' rule. The accuracy that is obtained by the system is  $\pm 86.5455\%$  and the computation time of the system is  $\pm 240.4143$  seconds ( $\pm 4.0069$  minutes).

**Keywords:** consumption meats, Curvelet Transform, k-Nearest Neighbor