

## **ABSTRACT**

*Cow's milk is a food material that has high nutrition so it is useful for maintaining health and growth processes. Pasteurized milk is one type of milk product that is widely produced and sought after by all people. With affordable prices, milk is sought after by all people. Therefore, many people decide to sell pasteurized milk and mix water and other substances to achieve greater profits. The impure milk will certainly decrease the nutritional content and the quality of freshness is no longer perfect.*

*The problem is, only people who are experts in this field can distinguish the purity of cow's milk, and it must use special devices. So that ordinary consumers can only distinguish it through vision and smell, but are very inaccurate. Therefore the authors made a Final Project aimed at facilitating consumers to detect the purity of pasteurized cow's milk using digital image processing technology through the Matrix Laboratory (MATLAB) software. In the early stages of milk image samples taken using a digital camera, then it will be identified using the Scale Invariant Feature Transform (SIFT) method and will be classified using the K-Nearest Neighbor (KNN) method.*

*Based on the analysis of system performance, a better level of accuracy when using the SIFT method is by classifying Cosine Similarity by 100% and computation time of 0.0692 seconds. The Gaussian Filter coefficient used is a  $7 \times 7$  matrix.*

**Keywords :** *Image processing, Scale Invariant Feature Transform, K-Nearest Neighbor*