

CHAPTER 1

INTRODUCTION

1.1. Background

The human body needs sufficient nutrition to support the productivity of its activities. One of the nutrients that can support the productivity of human body activities is protein. Not only as an energy source instead of carbohydrates and fats, Diana[1] has shown that protein also works to regulate the body's metabolic process as well as the body's defense mechanism in warding off toxic substances and maintaining the cells and body's tissues. One of the protein that is often consumed by humans is meat, this is because the need for these foodstuffs is very high, but there still some meats that are sold in a semi-fresh to spoiled condition due to the lack of understanding in distinguishing fresh, half-fresh, and spoiled meat that can cause a risk to the body when consumed. Therefore, an technology is needed for helping sellers to determine the freshness of meat so that can make the sellers provide the meat in best quality to the community.

The technology that is often found in daily life is a computer, because it's able to process and process data quickly. Along with the development of innovation, computers are not only for processing and processing data, but computers are also developed to be able to recognize and extract information from the taken object.

The Convolutional Neural Network algorithm is the right way to applied in a computer system because it's able to recognize objects. Peryanto et al.[2] stated that Convolutional Neural Networks are based on the object recognition system which contained in the human visual cortex so that it's able to process and produce information from retrieved objects significantly.

The application of the Convolutional Neural Network algorithm has a great benefits for meat sellers because the algorithm is able to make meat sellers easier to determine the freshness of meat that is worth to sell to the public. In this project of meat freshness classification using the Convolutional Neural Network algorithm, classification is done using five variants of training, validation, and testing data to determine the best data variant when the classification process is done with a Convolutional Neural Network model.

1.2. Problem Formulation

How the effect of the using of Convolutional Neural Network algorithm to determine the freshness of meat with five different data variants?

1.3. Scope

This project uses the Meat Freshness Image Dataset (Shanawad, 2022) that sourced from Kaggle. This dataset has 2,266 data divided into three categories of meat freshness (fresh, half fresh, spoiled). The dataset will be processed using the Convolutional Neural Network algorithm using Google Colab to generate a Convolutional Neural Network model that is used to determine the meat freshness information of the inputted meat object.

1.4. Objective

This project aims to find out the convolutional neural network algorithm to classify five different variants data.

