

## ABSTRACT

The use of technology has a massive impact on people's lives nowadays, such as the object detection system. This system can detect various types of objects, such as cars, animals, and many others. One of the methods used to build it is Machine Learning. However, various kinds of research are still needed to determine whether the method suits specific problems. One of the problems often faced is object detection in low-light images due to decreased image quality which impacts the model's performance. This study builds an object detection system using the Detection Transformer model because this model is one of the models that use the latest method for object detection problems. This model has the advantage of simpler architecture than most models but still has a benchmark level equal, if not better, than the competitor. The problem being tested is how the model's performance can detect objects in low-light images. The dataset used in this study is the Night Object Dataset (NOD), which is a dataset that contains a collection of images that focus on objects in the dark. The results obtained from this experiment are that DETR succeeded in getting an AP score of 0.572 on the validation data.

**Keywords:** *Machine Learning, Object Detection, Detection Transformer, Low Light Image*