# *ABSTRACT*

*Fire is one of the elements that exist on earth and is often used by humans to support their daily activities. However, in the use of fire, attention is needed for safety so that unwanted things do not happen. To prevent this, it can be done by utilizing technological developments, one of which is by using a multimedia system in the form of images that can help humans control certain things.*

*In this final task research built a fire detection system on a webcam using image processing. The study used color model and motion model methods with an average accuracy percentage of detection on fire videos of 67.22% and in non-fire videos moving by 68.20% and in non-fire not moving with a fire color of 0%.*

*The purpose of making this tool is to reduce the risk and prevent the danger of fire threats that may occur so that it can be handled more quickly. In this research is used image processing with the YOLOv3 method compared to the Haar Cascade Classifier method to detect fire objects with a detection accuracy and precision of more than 80% and can find out the location of the coordinates of the point (x, y) of the object detected on the display.*



*Keyword: fire, Haar Cascade Classifier, Image processing, OpenCV, Webcam, YOLOv3.*