

Abstract

Fire is an event that causes a fire, where a fire disaster can cause enormous losses and can threaten life safety. Fire events are more often caused by human negligence. There are many studies on this issue, but they only focus on detection accuracy without considering mobility and convenience which in fact are very much needed in designing a fire detection system. This research is designed to create a camera-based fire detection system indoors. by utilizing the Telegram Bot application as a notification service when a fire occurs. This system uses TensorFlow Lite as a framework for machine learning and the YOLOv5 Model as a fire detection pretraining model and then Mini PC (Raspberry Pi 4 Model B) as a data processor and control device for this system. After testing the fire detection system, it obtained an accuracy of 85%, and proved that this system was built with good mobility without reducing the accuracy of fire detection.

Keywords: fire, detection, telegram bot, tensorflow lite, yolov5 model, mini
