finding filters, respectively. The filter parameters, in which fire detection is performed with the highest success, have been determined after many test processes. The operating modes and parameters of the filters used are as follows, respectively:

Brightness filter: With this filter, the brightness of the image is reduced by 50%. Because the light in the environment increases when a fire occurs, the camera is affected by this light and can obscure other objects [31].

HSL filter: HSL color space is the representation of different colors with their H, S and L values. H (Hue) represents the amount of similarity between red-yellow-green-blue. S (Saturation) represents the intensity of a color. L (Lightness) represents the white and black balance in the image. In this filter, color saturation is adjusted by setting the S value to 0.6.

our own datasets and successful results can be obtained [47]. This process is called transfer learning. In this study, the weights of the Inception V3, SequeezeNet, VGG16 and VGG19 trained models were used. The reason for choosing these models is that they are frequently used in the literature and have high classification success.

2.6. Performance Metrics

Some metrics are needed to measure the success of classification models [48]. The most frequently used metrics are accuracy, precision, recall and F-1 score [49]. Calculation of these metrics can be done with a table called confusion matrix. Shows the ratios between the predicted and actual class. True positive (TP) value indicating the number of positive samples classified as correctly in