

Abstract

The smoke detection sensor is currently unable to fully detect specifically vape smoke itself, resulting in ambiguity in decision making. Vape and cigarette smoke are different from each other, cigarette smoke is the result of burning from tobacco, while vape smoke comes from heating liquids that produce steam in the form of smoke. Therefore, it is proposed a smart device that can detect vape smoke by combining the MQ2 gas sensor, MQ7 gas sensor, and temperature sensor and humidity sensor connected to the microcontroller. In order to avoid ambiguity in decision making in data processing, feature importance technique is used to select the appropriate sensor to detect vape smoke by providing a value for each sensor according to the effect on the outcome of the decision. For classification, a random forest method is used that matches the feature importance [1] and firebase as storage media. By using these devices and methods, the sensor sensor is suitable to detect vape smoke so that it gets an accuracy of 95%.

Keywords: Feature Importance, MQ7, MQ2, DHT22, Random Forrest.