# LITERATURE SURVEY

**Paper Title :** A Smart Fire Detection System using IoT Technology With Automatic Water Sprinkler.

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**Problem Statement /Proposed Solution :**

- House combustion is one of the main concerns for builders, property residents. Singular sensors were used for a long time in the event of detection of a fire, but these sensors can not measure the amount of fire to alert the emergency response units.
- This model proposed to implement not only monitoring for fire but also to alert the property owner as well as the authority about the fire
- Also it activates the sprinkler system automatically in case of fire combustion
- It can be done with various sensors to detect fire,smoke as well as send the data to cloud using a gsm module

**Tools Used To Implement :**

- Microprocessor / Microcontroller like arduino or raspberry pi for processing and sending the sensor data
- Flame sensor , Temperature sensor , gas sensor are used to monitor for fire.
- Ubidots is used for the cloud and process the data

**Result :**

- When a flame sensor detects light that ranges from 760 nm to 1100nm, fire is detected, and data are
- collected into the IoT platform of Ubidots. Ubidots sends SMS messages into a signed phone number

- the temperature goes from 0 Celsius to 100 Celsius
- The gas sensor takes two displays; one is an indicator for the voltage, one for gas percentage
- The result is quick response to the fire in case of an sudden combustion

**Important References :**

[1] Bu, F. and Gharajeh, M.S., 2019. Intelligent and vision-based fire detection systems: A survey. Image and Vision Computing, 91, p.103803.
[2] Saeed, F., Paul, A., Rehman, A., Hong, W.H. and Seo, H., 2018. IoT-based intelligent modeling of smart home
environment for fire prevention and safety. Journal of Sensor and Actuator Networks, 7(1), p.11.
[3] Saeed, F., Paul, A., Karthigaikumar, P. and Nayyar, A., 2019. Convolutional neural network based early fire detection. Multimedia Tools and Applications, pp.1-17.
[4] Shokouhi, M., Nasiriani, K., Khankeh, H., Fallahzadeh, H. and Khorasani-Zavareh, D., 2019. Exploring barriers and
challenges in protecting residential fire-related injuries: a qualitative study. Journal of injury and violence
research, 11(1), p.81.