Project Flow

The user interacts with a web camera to read the video.

Once the input image from the video frame is sent to the model, if the fire is detected it is showcased on the console, and alerting sound will be generated and an alert message will be sent to the Authorities.

To accomplish this, we have to complete all the activities and tasks listed below

Data Collection.

Collect the dataset or create the dataset.

Image Preprocessing.

Import ImageDataGenerator Library.

Define the parameters /arguments for ImageDataGenerator class

Applying ImageDataGenerator on trainset and test set.

Model Building

Import the model building Libraries

Initializing the model

Adding CNN Layers

Adding Hidden Layer

Adding Output Layer

Configure the Learning Process

Training and testing the model

Optimize the Model

Save the Model

Video Streaming and alerting

OpenCV for video processing

Creating an account in Twilio service

Use Twilio API to send messages.