

## PROJECT FLOW

- Fire in a sparsely populated forest area it is more difficult if the prediction is done using ground-based methods like Camera or Video-Based approach.
- 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.
- Usage of satellite images to observe, detect, and report fire events. Implementation of the wireless sensor networks to observe the fire events exist in all areas.

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

- Data collection – data collection is the process of gathering, measuring, and analyzing accurate data from a variety of relevant sources to find answers to research problems, answer questions, evaluate outcomes, and forecast trends and probabilities.
- Collect the dataset or create the dataset.
- Image pre-processing- Image is a method to perform some operations on an image, in order to get an enhanced image or to extract some useful information from it.
- Import Image Data Generator Library.

- Define the parameters/ arguments for Image Data Generator class
- Applying Image Data Generator on transient and test set.
- Model Building
- Import the model building libraries
- Initializing the model
- Adding CNN Layers
- Adding Output Layers
- Configure the Learning Process
- Training and testing the model
- Optimize the model
- Save the model
- Video Streaming and alerting
- Open CV for video processing
- Create an account in Twilio service
- Use Twilio API to send message.