# EMERGING METHODS FOR EARLY DETECTION OF FOREST FIRES

**MODEL BUILDING**

# CONFIGURING THE LEARNING PROCESS

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| **Project Name** | Emerging Methods for Early Detection of  ForestFires |

## Importing The ImageDataGenerator Library

import keras

from keras.preprocessing.image import ImageDataGenerator

## Define the parameters/arguments for ImageDataGenerator class

train\_datagen=ImageDataGenerator(rescale=1./255,shear\_range=0.2, rotation\_range=180,zoom\_range=0.2, horizontal\_flip=True) test\_datagen=ImageDataGenerator(rescale=1./255)

## Applying ImageDataGenerator functionality to trainset

x\_train=train\_datagen.flow\_from\_directory(r'/content/drive/MyDrive/Dataset/train\_set', target\_size=(128,128),batch\_size=32, class\_mode='binary')

Found 436 images belonging to 2 classes.

## Applying ImageDataGenerator functionality to testset

x\_test=test\_datagen.flow\_from\_directory(r'/content/drive/MyDrive/Dataset/test\_set', target\_size=(128,128),batch\_size=32, class\_mode='binary')

Found 121 images belonging to 2 classes.

## Import model building libraries

*#To define Linear initialisation import Sequential*

from keras.models import Sequential

*#To add layers import Dense*

from keras.layers import Dense

*#To create Convolution kernel import Convolution2D*

from keras.layers import Convolution2D

*#import Maxpooling layer*

from keras.layers import MaxPooling2D

*#import flatten layer*

from keras.layers import Flatten import warnings warnings.filterwarnings('ignore')

## Initializing the model

model=Sequential()

## Add CNN Layer

model.add(Convolution2D(32, (3,3),input\_shape=(128,128,3),activation='relu')) #add maxpooling layer

model.add(MaxPooling2D(pool\_size=(2,2))) #add flatten layer

model.add(Flatten())

## Add Dense Layer

*#add hidden layer* model.add(Dense(150,activation='relu')) *#add output layer* model.add(Dense(1,activation='sigmoid'))

## Configure the learning process

model.compile(loss='binary\_crossentropy',optimizer="adam",metrics=["accuracy"])