**IBM-PROJECT-40439-1660629443**

**LITRATURE SURVEY**

**1.**DEEP LEARNING-BASED CLASSIFICATION OF EARTHQUAKEIMPACTED USING TEXTUAL DAMAGE DESCRIPTIONS.

Sujith Mangalathu , Henry V.Burton

- The long short –term memory(LSTM) deep learning method is applied to classify building damage based on textual descriptions of damage.

- The damaged state of an individual buildings is classified using the ATC-20 tags (Red, yellow and green).

- The damaged set ,is divided randomly into training and test subsets .A predictive model is established during the LSTM and the performance of the model is evaluated using the test set.

- LSTM has an overall accuracy of 86%.It can therefore be inferred that the LSTM model can assign the ATC-20 tag based On a textual description of damage with an accuracy of 86%.

TECHNOLOGY USED:

1.Deep learning (LSTM)

2.Recurrent Neural Network

**2.**IDENTIFICATION OF POTENTIAL LANDSLIDE DISASTER IN EAST JAVA USING NEURAL NETWORK MODEL.

Alvina Khairun Nisa, Mohammad Isa Irawan & Danar Guruh Pratomo

- East java provinces is one of the areas that has the potential for landslides .This is due to topography of the most mountaineous and rugged territory.

- Besides that , it also caused high levels of populations density in the regions of hills so that rises pressure on ecosystem .

- The Tendancy of the occurance of landslides in an area can be connected with equality of land characteristics and climate in other regions on a landslide in the past.

- The training function used is resilient back propagation (RP) with an accuracy testing data is 90.56% and MSE of 0.0944.

## TECNOLOGY USED:
1.Artificial Neural Network(ANN)
2.Back Propagation

## 3.MULTI-VARIATE FLOOD DAMAGE ASSESSMENT : A TREE-BASED DATA -MINING APPROACH

## B.Merz , H.Kreibich and U.Lall

- The flood damage assessment consists of stage-damage function which relate the relative are absolute damage for a certain class of object to the inundation depth.

- Other characteristics of the flooding situations and of the flooded object are rarely taken into account although flood damage is influenced by a variety of factors.

- The difference across all the models in terms of spread of the criteria is however not statistically significant at 90 or 95% level .

## TECHNOLOGY USED:
1.Regression Tree(RT)

2.Bagging decision tree(BT)

## 4. DETECTION OF WILD FIRE SMOKE IMAGES BASED ON A DENSELY DILATED CONVOLUTIONAL NETWORK

## Tingting Li ,Enting Zhao , Junguo Zhang and Chunhe Hu

- The application of CNNs in a wildfire smoke detection still faces several issues eg., thehigh false alarm rate of detection.

- To address these issues ,They proposed a novel framework integrating Convolution methods into CNN for wild frame smoke detection.

- The proposed WSDD-Net achieved multi scale feature extraction by combining dilated convolution with dense block .

- The proposed WSDD-Net was evaluated according to two smoke datasets and achieved a high AR(99.20%) and a low FAR (0.24%)

## TECHNOLOGY USED:

1.Convolutional Neural Network (CNN)

2.Wildfire Smoke Dilated Densenet(WSDD)

3.Dilated Dense Connection (DDC)

# 5. FLOOD SUSCEPTIBILITY MODELLING USING ADVANCED ENSEMBLE
# MACHINE LEARNING MODELS

## Abu Reza Md Towfiqul Islam, Swapan Talukdar, Susanta Mahato

- The most destructive disasters because of the immense damage to land ,building and humans fatalities

- It is difficult to forecast the area that are vulnerable to flash flooding due to dynamic and complex nature of the flash floods.

- The study of assessed two new hybrid ensemble models, namely dagging and random subspace(RS) coupled with artificial neural network(ANN).

- The findings showed that, in the case of Dagging model, is smallest area Percentage(14.03%) comes under the very higher class, followed by low(14.89%), high(15.61%).

## TECHNOLOGY USED:

1. Artificial Neural Network(ANN)
2. Dagging

3. Support Vector Machine(SVM)

## 6. A COMPARISON OF MACHINE LEARNING APPROACHES TO IMPROVE
## FREE TOPOGRAPHY DATA FOR FLOOD MODELLING

### Michael Meadows and Matthew Wilson

- Despite the severe vertical biases that are known to effect them, many large-scale flood hazard assessments continue to rely on freely-available worldwide Digital Elevation Models.
- This is due to the high financial and institutional cost of collecting and processing precise topographical data.
- We show that the FCN outperforms the other models, reducing root mean square error in the testing dataset by 71%.
- This is probably because the FCN can learn from spatial patterns at many scales, as opposed to only pixel-by-pixel learning, which allows it to beat the other models.

### TECHNOLOGY USED:

1. Fully Convolutional Neural Network(FCN)
2. Digital Elevation Model(DEM)

## 7. A DEEP CASCADE OF CONVOLUTIONAL NEURAL NETWORK FOR DYNAMIC MR IMAGE RECONSTRUCTUION

### Jo Schlember, Jose Cavallero, Joseph V.Hajnal

- Using a deep cascade of convolutional neural networks (CNNs), we offer a framework for recreating dynamic sequences of 2-D cardiac magnetic resonance (MR) pictures from undersampled data in order to speed up the data collecting process.
- By integrating convolution and data sharing techniques, we show that CNNs are capable of learning spatio-temporal correlations effectively. We demonstrate that the suggested approach regularly outperforms leading techniques and can faithfully preserve anatomical structure despite undersampling by up to 11 times.
- In conclusion, despite the fact that CNNs can only learn local representations that shouldn't have an impact on global structure, it is still unclear how the CNN approach will perform when images contain pathologies or other more changeable content.

### TECHNOLOGY USED:

1. Cascading Network
2. Convolutional Neural Network

## 8. ABNORMAL CROWD BEHAVIOUR DETECTION USING MOTION INFORMATIO IMAGES AND CONVOLUTIONAL NEURAL NETWORK

CEM DIREKOGLU

- A cutting-edge technique for finding unusual crowd events in CCTV footage.
- Our work specifically focuses on the detection of panic and escape behaviour that may occur in response to violent events and natural catastrophes.
- A novel method for identifying aberrant crowd behaviour uses the MII generation in conjunction with a CNN. UMN and PETS2009 are two popular datasets utilised in experiments.
- Evaluation shows that our approach yields the best outcomes.

## TECHNOLOGY USED:
1. Convolutional Neural Network(CNN)
2. Motion Information Image(MII)