Satellite Imagery

Flood Detection Project

Team 15

Team members:-

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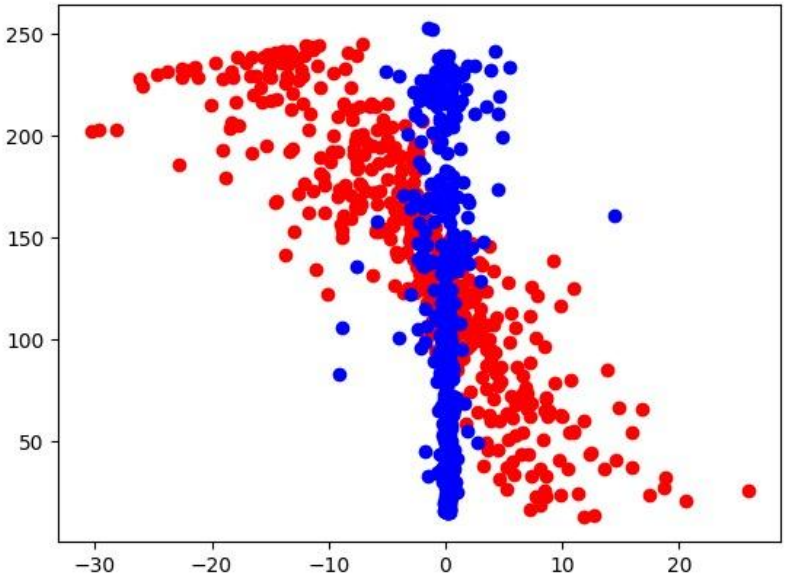
1. Data Preprocessing

1. Convert image to grayscale
2. Flatten image and resize (400*400)

Visualization:-



2. Feature Extraction

1. Local Binary Pattern
   LBP works by comparing each pixel in an image with its surrounding neighbors to build a binary pattern. The binary pattern is then used to represent the texture of the image.

2. Texture analysis

3. Models

1. SVM classifier
   Accuracy : 90

	precision	recall	f1-score	support
0.0	0.89	0.92	0.90	96
1.0	0.91	0.88	0.89	89
accuracy			0.90	185
macro avg	0.90	0.90	0.90	185
weighted avg	0.90	0.90	0.90	185

2. Random Forest

	precision	recall	f1-score	support
0.0	0.95	0.90	0.92	96
1.0	0.89	0.94	0.92	89
accuracy			0.92	185
macro avg	0.92	0.92	0.92	185
weighted avg	0.92	0.92	0.92	185

Deep learning model:
Flood Detection using Deep Learning (Finetuning MobileNet, KERAS)

Total params: 1,633,474

Trainable params: 812,034

Non-trainable params: 821,440

4. **Coloring Flood Segmentation**

Using K Mean classifier k=2