A SYNOPSIS ON

FLOOD PREDICTION USING AI

Submitted By:

Ajay Karthik 4SN17CS700

Chaitanya Thekkunja 4SN17CS711

Kishan Kashyap 4SN17CS714

Shubhang 4SN17CS723

Project Guide:

Mrs Gangothri S

Associate Professor

Submitted To:

Mr. Sudarshan K.

Associate Professor

Project Coordinator

COMPUTER SCIENCE AND ENGINEERING

SRINIVAS INSTITUTE OF TECHNOLOGY

(NAAC ACCREDITED)

MANGALURU-574143, KARNATAKA

2020-2021

FLOOD PREDICTION USING AI

ABSTRACT

Floods are among the most destructive natural disasters, which are highly complex to model. The research on the advancement of flood prediction models contributed to risk reduction, policy suggestion, minimization of the loss of human life, and reduction the property damage associated with floods. To mimic the complex mathematical expressions of physical processes of floods, during the past two decades, machine learning (ML) methods contributed highly in the advancement of prediction systems providing better performance and cost-effective solutions. Due to the vast benefits and potential of ML, its popularity dramatically increased among hydrologists. Researchers through introducing novel ML methods and hybridizing of the existing ones aim at discovering more accurate and efficient prediction models.

PROBLEM STATEMENT

Among the natural disasters, floods are the most destructive, causing massive damage to human life, infrastructure, agriculture, and the socioeconomic system. Governments, therefore, are under pressure to develop reliable and accurate maps of flood risk areas and further plan for sustainable flood risk management focusing on prevention, protection, and preparedness.

PROPOSED IDEA

This system aims to collect data from all the states of India and form a generalized dataset. A machine learning algorithm is applied to the labelled dataset, and patterns are extracted, which, in turn, obtain maximum accuracy with real-time input. In general, the dataset collected for predicting is split into a Training set and Test set. Generally, 7:3 ratios are applied to split the Training set and Test set. The Data Model is then created using a Multi-Layer Perceptron Classifier, and the resulting data set is then passed through it for prediction.

SOFTWARE REQUIREMENTS

- Python Programming Language.
- Jupyter Notebook.

IMPLEMENTATION

The evaluation of the prediction accuracy of the classifiers is carried out using data validation, and the results have been compared to obtain accuracy. It has to find the accuracy of the training dataset, accuracy of the testing dataset, specification, false-positive rate, precision, and recall by comparing algorithms using python code. The following involvement steps are,

- Gathering the data.
- Preparing the data.
- Evaluating Algorithms.
- Improving Results.
- Predicting Results.

REFERENCES

1. https://encyclopedia.pub/73
2. https://www.irjet.net/archives/V7/i5/IRJET-V7I51189.pdf