

Project Design Phase-I

Solution Architecture

Date	23 October 2023
Team ID	592670
Project Name	Project - Machine Learning Approach For Predicting Rainfall
Maximum Marks	4 Marks

Solution Architecture:

Data collection and preparation: This component is responsible for collecting and preparing the dataset that will be used to train the machine learning model. The dataset may include historical rainfall data, weather data, and other environmental data. The data needs to be cleaned and pre-processed to ensure that it is in a format that is compatible with the machine learning algorithm.

Model selection and training: This component is responsible for selecting a machine learning algorithm and training the model on the prepared dataset. There are a variety of machine learning algorithms that can be used for rainfall prediction, such as linear regression, decision trees, and random forests. The choice of algorithm will depend on the specific dataset and the desired accuracy of the prediction.

Model evaluation: This component is responsible for evaluating the performance of the trained model on a held-out test set. The test set should contain data that was not used to train the model. This will help to ensure that the model generalizes well to new data.

Model deployment: This component is responsible for deploying the trained model to production. The model can be deployed on a cloud computing platform, on-premises server, or mobile device.

Solution Architecture Diagram:

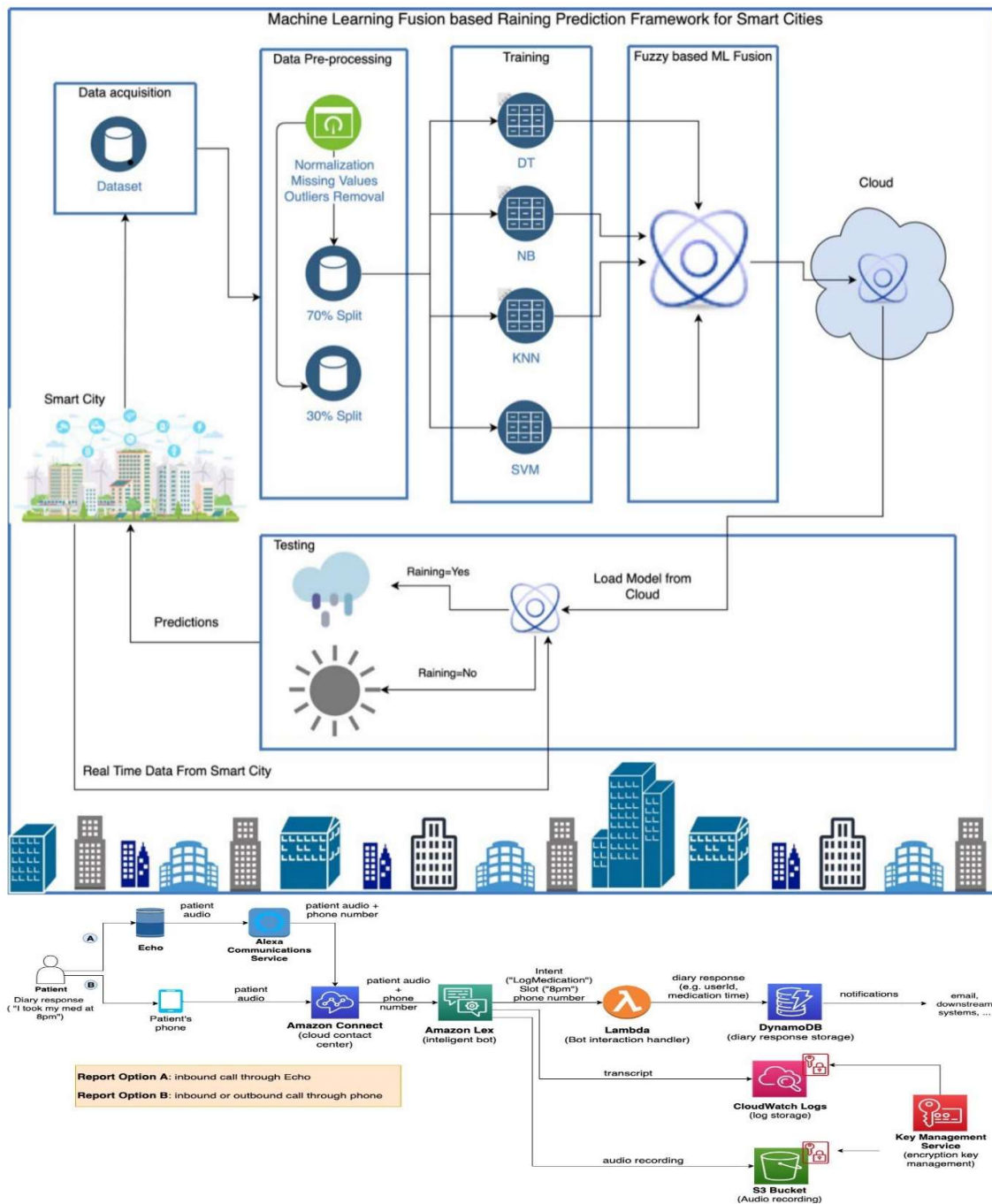


Figure 1: Architecture and data flow of rainfall prediction application

Reference: <https://www.mdpi.com/1424-8220/22/9/3504#:~:text=This%20research%20proposes%20a%20novel%20real-time%20rainfall%20prediction,Na%C3%AFve%20Bayes%2C%20K-nearest%20neighbors%2C%20and%20support%20vector%20machines.>