TRIMED-AI

(AI Powered top 3 probable Disease Prediction and Personalized

Health Recommendations)

PROBLEM STATEMENT:

Creating a virtual health assistant predicting diseases based on symptoms, and offering comprehensive and personalised guidance

TEAM DETAILS:

TEAM MEMBERS:
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MENTOR: Sukhpal Singh

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(Deemed to be University)

Your health, our mission

INTRODUCTION AND DATASET OVERVIEW

EARLY DISEASE DETECTION

It is essential for effective healthcare, but traditional diagnosis methods can be costly, time-consuming, and inaccessible to many.

TOP 3 PREDECTIONS

The model predicts the top three possible diseases along with their probability percentages, helping users make informed decisions about their health.

MEDICATIONS

This tool enhances awareness, prevention, and self-care, and provides recommendations, medications , diet and workout advice

CSV

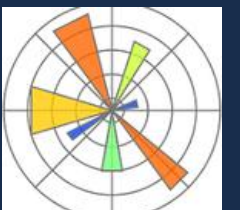→ **Training.csv**:

→ Symptoms.csv

→ **Diets.csv**

→ **Description.csv,**

CSV

→ **Testing.csv**

→ **Precautions.csv**:

→ **Medications.csv**

→ **Workout.csv**

Trained

on:
41 DISEASES

132

SYMPTOMS

LINK TO THE PROJECT: https://huggingface.co/spaces/Nnikita/Disease-prediction-app

FLOWCHART AND EVALUATION CRITERIA

1 DATA COLLECTION & UPLOAD

2 DATA PREPROCESSING & CLEANING

3 ONE - HOT ENCODING

4 MODEL SELECTION & TRAINING

5 EVALUATION & OPTIMIZATION

6 DEPLOYMENT
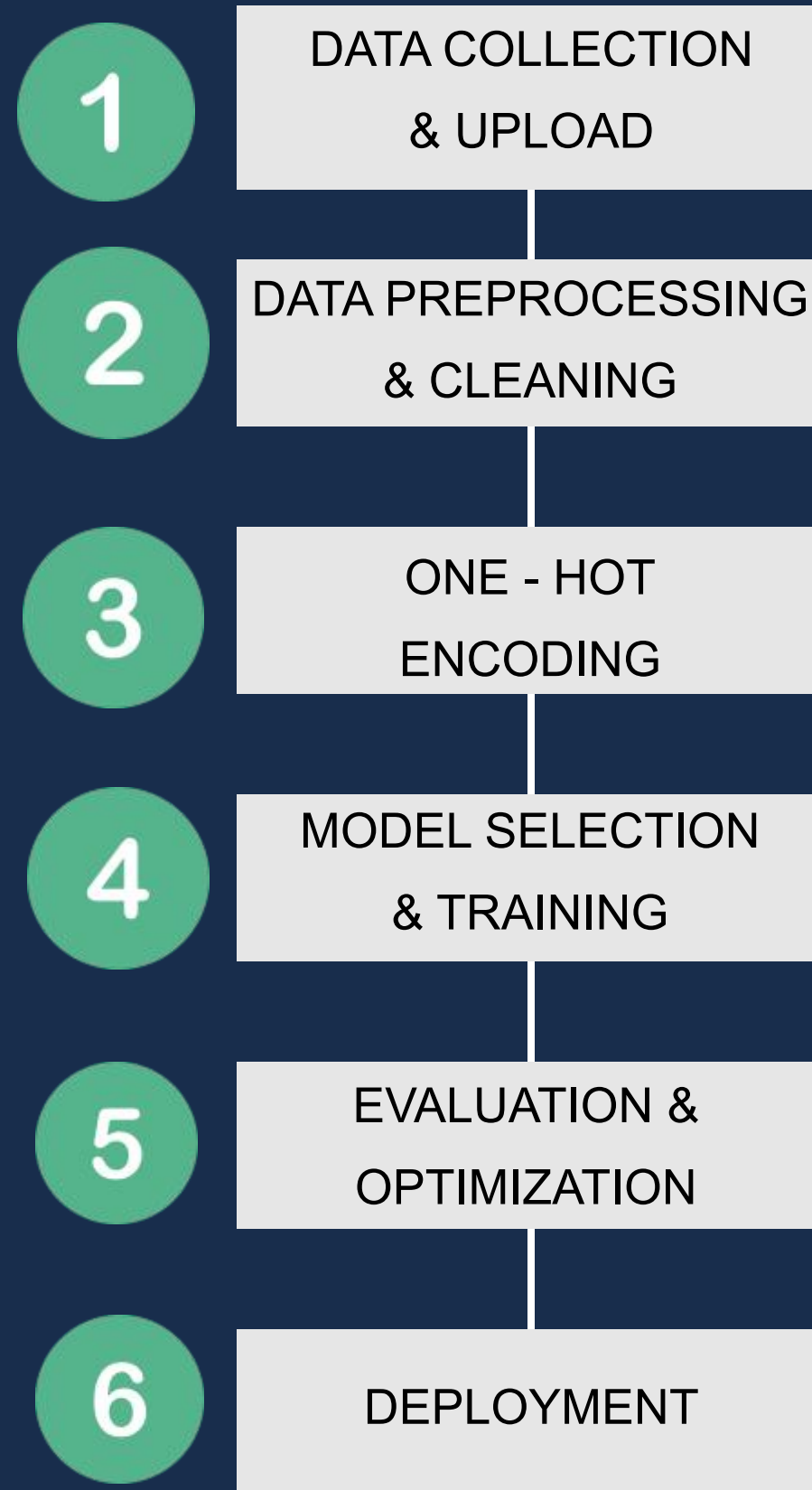
MODELS IMPLEMENTED:

Random Forest Classifier

XGBoost Classifier

Deep Learning Model (50 & 100 Epochs)
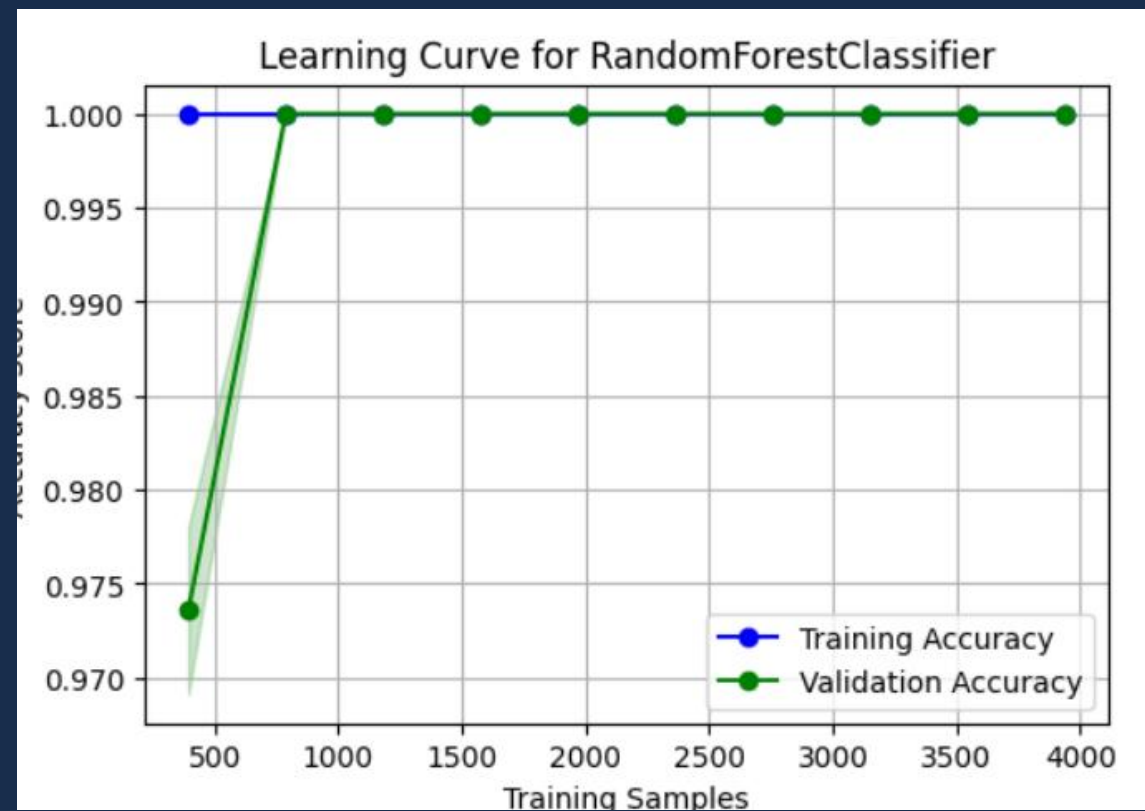
ANALYSIS FACTORS:

ACCURACY

Learning Curves

Overfitting Measure

Graph 1

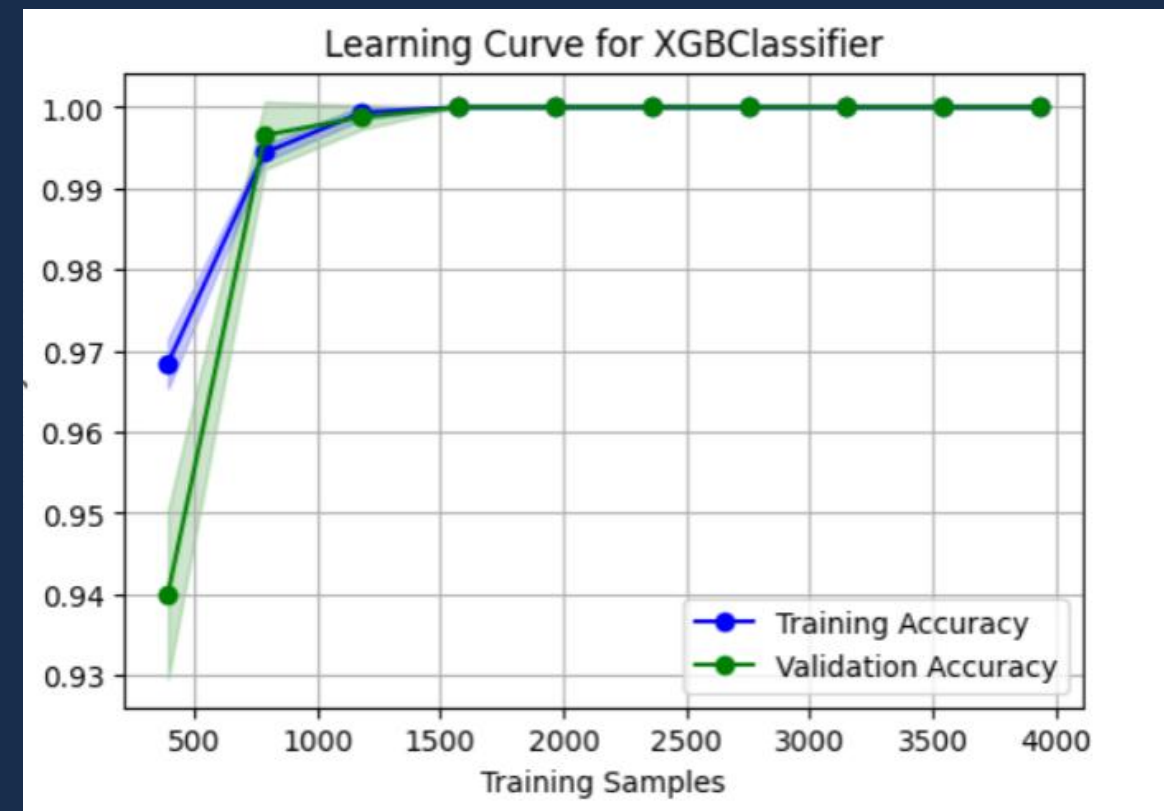Graph 2

Graph 3

Graph 4

MODEL IMPLEMENTATION AND EVALUATION

1. RANDOM FOREST CLASSIFIER

Graph 1 shows that the TA is consistently 100%, while the VA stabilises at nearly 99.9%, indicating potential overfitting.
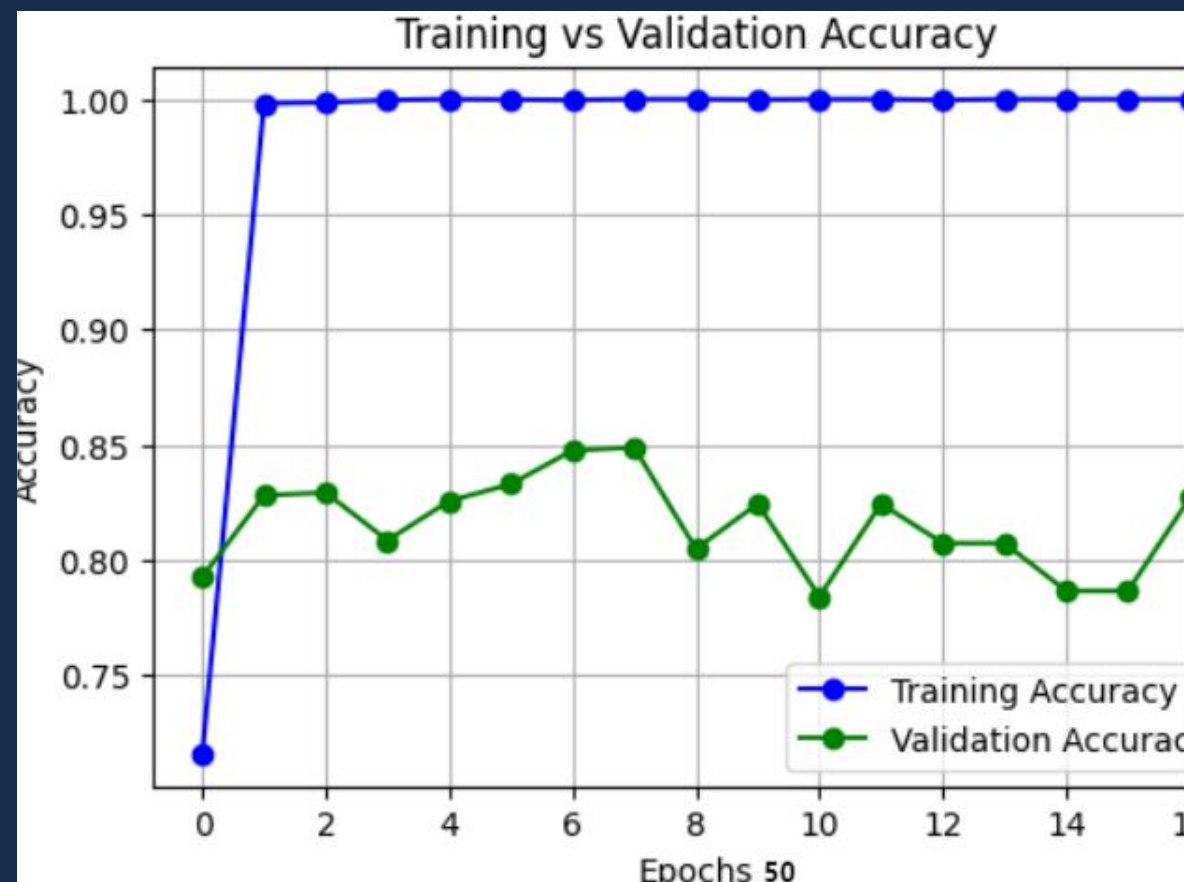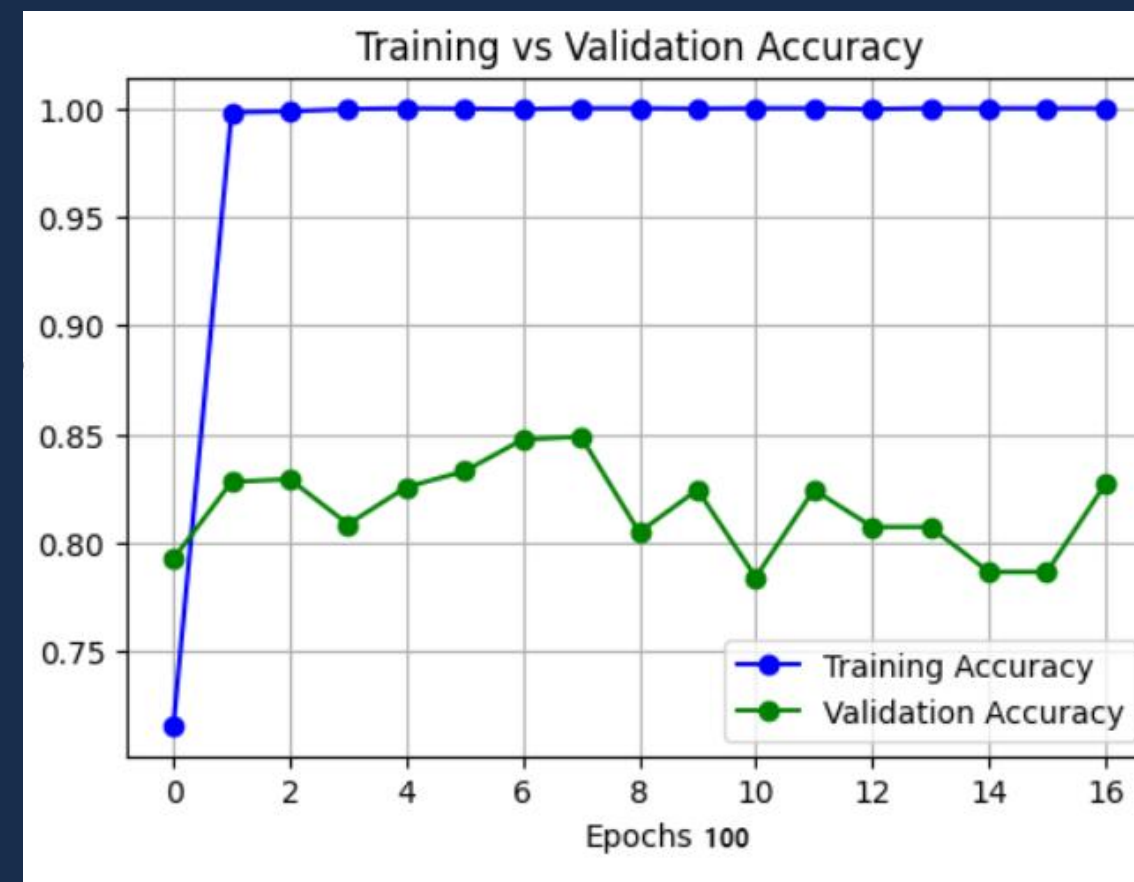
2. XGB CLASSIFIER

Graph 2 exhibits a more gradual improvement, with VA reaching nearly 99.8%. It shows slightly better generalization than Random Forest.
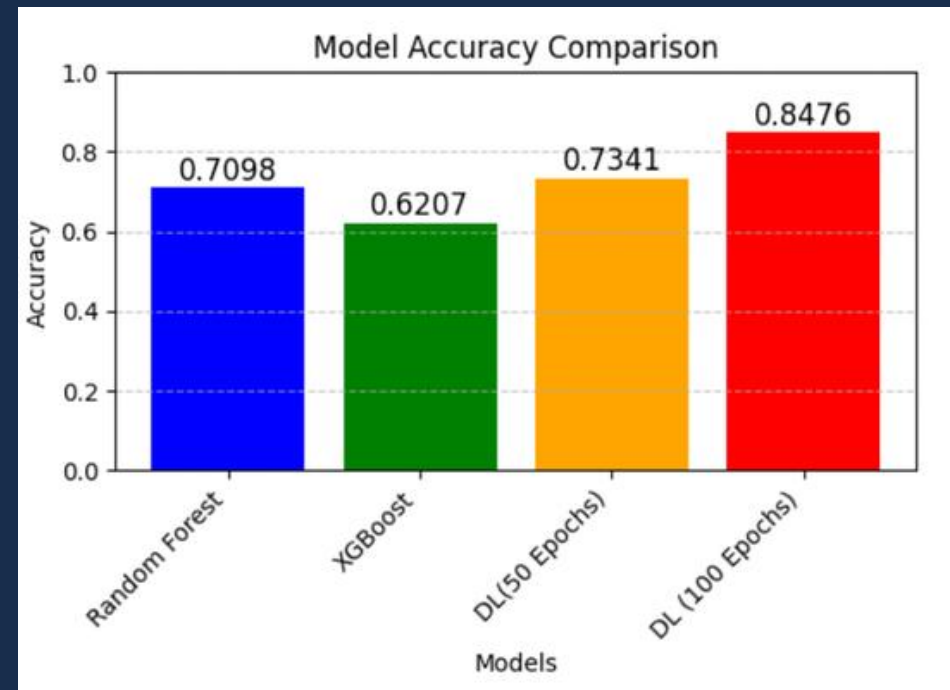
3.DEEP LEARNING

Initially, TA rapidly increased to 100%, but VA fluctuated around 80%–85%.

RESULTS AND INSIGHTS

ACCURACY COMPARISON:

Random Forest: 70.98%

XGBoost: 62.07%

Deep Learning (50 Epochs): 73.41%

Deep Learning (100 Epochs): 84.76% (Best)

The model successfully predicted the top three most probable diseases along with their respective confidence scores, enhancing reliability

CHALLENGES:

1. The challenges were that model showed overfitting, requiring techniques like Dropout and early stopping.

2. Limited dataset diversity affected generalization, while imbalanced data led to biased predictions.

FUTURE IMPROVEMENTS

1.Future improvements include expanding the dataset,

2.Enhancing accuracy using transformer-based models

3.Real-time symptom tracking via wearables can improve predictions.

THANK YOU