PARSHWANATH CHARITABLE TRUST'S

A.P. SHAH INSTITUTE OF TECHNOLOGY

Department of Computer Science and Engineering

Data Science

CSE DATA SCIENCE

AI Health Mate: Automated Medical Recommendations

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Project Guide

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Outline

- Introduction

- Literature Survey of the existing systems

- Limitations of the existing systems

- Problem statement

- System Design

- Technologies and methodologies

- Implementation

- Conclusion

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INTRODUCTION

- AI-based system for personalized medical recommendations.
- Utilizes advanced algorithms to analyse medical data.
- Provides accurate and tailored health solutions.
- Enhances healthcare delivery through AI-driven insights

1.1 Motivation

- Personalized recommendations enhance patient outcomes by providing targeted and effective care.
- To improve patient outcomes through early, accurate diagnoses and timely interventions using AI.

1.2 Objectives

- To achieve disease detection Support vector classification algorithm is used.

- To provide recommendations for precautions, a support vector classification(svc) algorithm is used.

- To efficiently recommend medications, using support vector classification algorithms.

Literature Survey of the existing system

Sr. No	Title	Author	Year	Outcomes	Methodology	Demerits
1	[1] Multi Disease Prediction System Using Machine Learning	Kallepalli Reshma, Pasumarthi Niharika, Javvadi Haneesha, Kodithala Rajavardhan, Sana Swaroop	Februay 2024	The system detects disease by taking the symptom from the users.	Support Vector Classification	Only able to predict specific diseases. Our approach: Along with specific disease it also predict general diseases.

Literature Survey of the existing system

Sr. No	Title	Author	Year	Outcomes	Methodology	Demerits
2	[2] SVM for Disease Diagnosis in Primary Care	Emma White, John Roberts	2020	Predicts various common diseases in primary care settings using symptoms and basic test results.	Support Vector Classification	Limited to prediction without any further medical advice on treatment or diet. Our Solution: provide precautions to improve health outcomes.

Literature Survey of the existing system

| Sr. No	Title	Author	Year	Outcomes	Methodology	Demerits
3	[3] Disease Prediction using Machine Learning Algorithm	Sneha Grampurohit, Chetan Sagarnal	June 5 2020	The system predicts the most likely disease based on the symptoms provided by the user.	Support vector classification	The paper only predicts the disease, without offering treatment. Our approach includes both prediction and medication

LIMITATION OF EXISTING SYSTEM

- **History**:Existing systems lack history tracking, but ours provides it for personalized recommendations.

- **Absence of Precautionary Advice:** Many systems fail to provide precautionary measures for diagnosed diseases, which our project integrates seamlessly.

- **Absence of Medication Recommendations:** Many systems lack medication advice for diagnosed diseases, which our project provides effectively.

- **Accuracy:** Existing systems have lower accuracy due to limited data and outdated models, while our system improves accuracy using advanced algorithms and broader datasets.

Problem statement

- Effective healthcare relies on the ability to predict diseases early, provide preventative measures, and recommend appropriate treatments.
- However, patients often lack access to tools that integrate these capabilities in a comprehensive and user-friendly manner. This gap can lead to delayed disease detection, insufficient preventative strategies, and suboptimal medication management.

System Design
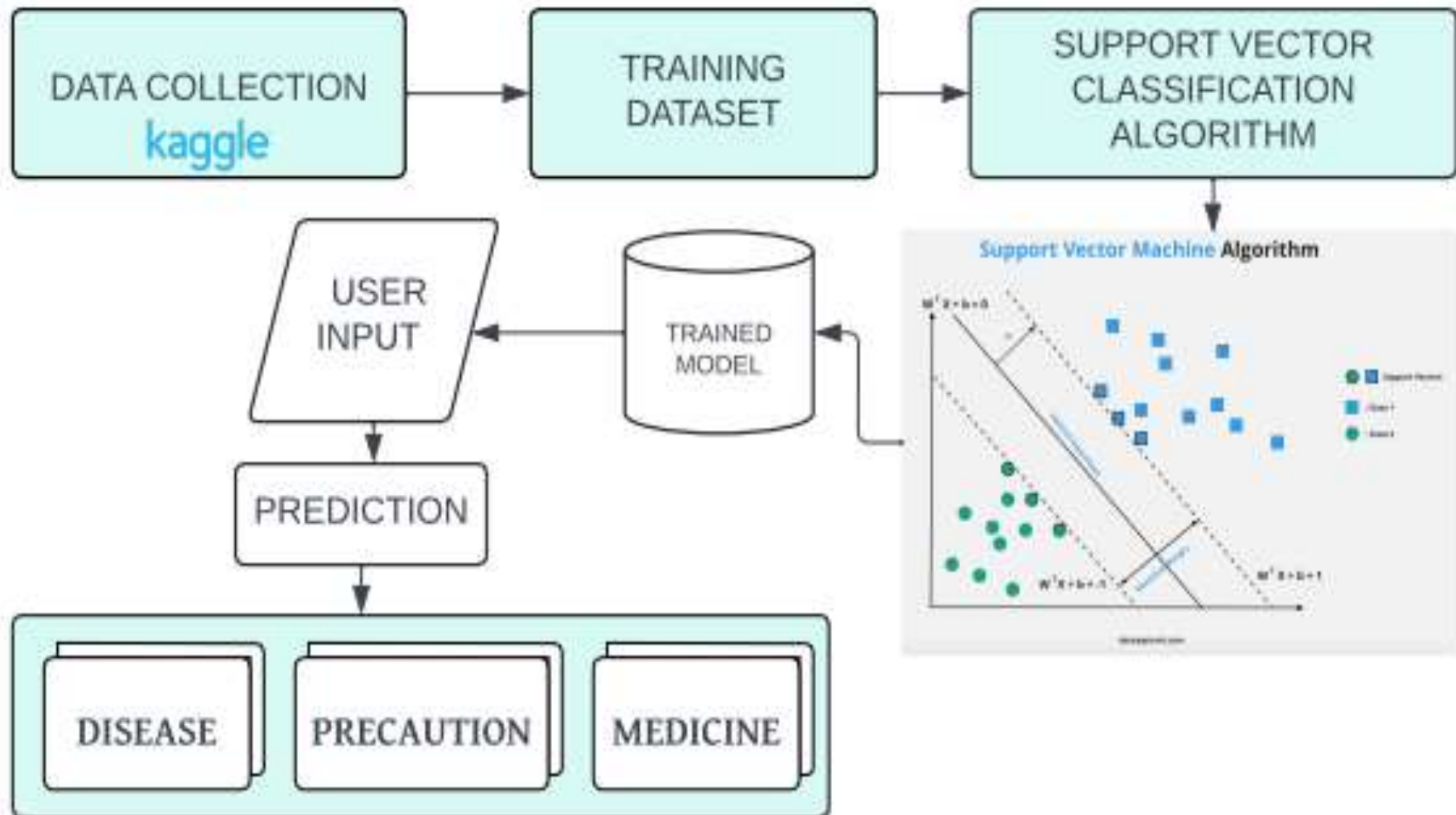
Technologies and methodologies

Frontend Technology :

- Bootstrap 5
- CSS 4.15
- HTML 5

Backend technology :

- Flask (3.0.2)
- Python (3.11.0)

Methodology:

- Support Vector Classification Algorithm

Datasets:

- Medication   9kb
- Precaution_df2   4kb
- Symptom-severity   3kb
- Symptoms   339kb
- Train   1,340kb

Implementation

Implementation

Implementation

Implementation

Prediction History

Date	Disease	Precautions	Medications
2024-09-22 14:13:23	Hypertension	meditation, salt baths, reduce stress, get proper sleep	
2024-09-21 21:57:49	viral fever	Drink Lots of Fluids , herbal teas, soups, Consume Warm and Healthy Food	['Acetaminophen Adults:500-1000 mg every 4-6 hours as needed Children: Dosage is based on weight, typically 10-15 mg','ibuprofen Adults: 200-400 mg every 4-6 hours as needed Children: Dosage is based on weight, typically 5-10 mg']

Conclusion

- AI Health Mate aims to transform healthcare by providing a comprehensive solution for disease detection, personalized prevention advice, and medication recommendations.
- By integrating these capabilities into a single, user-friendly system, AI Health Mate will help individuals manage their health more proactively, reduce the risk of serious conditions, and ensure more effective treatment. This innovative approach seeks to enhance overall patient care, support healthcare professionals, and contribute to a more efficient and responsive healthcare system.

References

[1]Kallepalli Reshma, Pasumarthi Niharika, Javvadi Haneesha, Kodithala Rajavardhan, Sana Swaroop, **' Multi Disease Prediction System Using Machine Learning'**, **Februay-2024**

[2]Emma White, John Roberts, **'SVM for Disease Diagnosis in Primary Care' , 2020**

[3]Sneha Grampurohit, Chetan Sagarnal , **'Disease Prediction using Machine Learning Algorithm' , June 5 ,2020**

Thank You...!!