Project Synopsis
on
Your Health

Submitted as a part of course curriculum for

Bachelor of Technology
in
Computer Science

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DECLARATION

We hereby declare that this submission is our work and that, to the best of our knowledge and belief, it contains no material previously published or written by another person nor material which to a substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgement has been made in the text.

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Date:

CERTIFICATE

This is to certify that Project Report entitled "**Your Health**" which is submitted by **Tryamb Sachan, Shivam Singh, and Suryansh Awasthi** in partial fulfilment of the requirement for the award of degree B. Tech. in Department of **Computer Science** of Dr A.P.J. Abdul Kalam Technical University, Lucknow is a record of the candidates own work carried out by them under my supervision. The matter embodied in this report is original and has not been submitted for the award of any other degree.

Date:

Supervisor Signature
Pawan Kumar Pal

Assistant Professor

(Department of computer Science)

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We also do not like to miss the opportunity to acknowledge the contribution of all the faculty members of the department for their kind assistance and cooperation during the development of our project.
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ABSTRACT

Your Health is an Android application based on machine learning and artificial intelligence technology that provides feedback on your skin by scanning it and also focuses on mental health.

The skin is the largest organ of the human body, which means that it can be an indicator of many different diseases. Healthcare providers are facing a large increase in skin-related complications and expenses. Our AI-ML-powered mobile application provides features for predicting any skin or genetic disease to help mitigate these risks. We have used Deep Learning to train our model, Deep Learning is a part of Machine Learning in which unlike Machine Learning it uses large dataset and hence the number of classifiers is reduced substantially. The machine learns itself and divide the data provided into the levels of prediction and in a very short period of time gives the accurate results, thereby promoting and supporting development of Dermatology. The algorithm that we have used is Convolutional Neural Network (CNN) as it is one of the most preferred algorithms or image classification.

Mental health is an important public health concern worldwide and should be a prominent part of the healthcare industry. With the help of advanced AI techniques and machine learning algorithms, a personalized care that focuses on providing emotional support catered to a specific individual has been facilitated. Here, we analyze various systems for mental health monitoring namely virtual counselling, precision therapy, and diagnostic systems by reviewing the algorithms and parameters used in each system. If a person is feeling stress, then making him happy we are using augmented reality and virtual reality environment to conduct some interactive sessions.

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Chapter-1: Introduction

Your Health is an Android application based on machine learning and artificial intelligence technology that provides feedback about your skin by scanning it and tracks your mental health by taking some input. The skin is the largest organ of the human body, which means that it can be an indicator of many different diseases. Healthcare providers are facing a large increase in skin-related complications and expenses. Due to the lack of medical facilities available in remote areas, patients usually ignore early symptoms, which may worsen the situation as time progresses. Hence, there is a rising need for an automatic skin disease detection system with high accuracy. Our AI-ML-powered mobile application provides features for predicting any skin disease to help mitigate these risks. The machine learns itself and divide the data provided into the levels of prediction and in a very short period of time gives the accurate results, thereby promoting and supporting development of Dermatology. The algorithm that we have used is Convolutional Neural Network (CNN) as it is one of the most preferred algorithms for image classification.

On the other hand, we are also focusing on mental health in this project. There are many algorithms in ML, like Decision Tree, Random Forest, and Naive Bayes, that help find mental health disorders. These algorithms produce better and more accurate disease-related results. It will reduce people's costs and medical expenses. Our mental health tracker provides an AR/VR meditation facility so anyone can get rid of these depressive symptoms and lead a healthy life.

Problem Statement

1. Lack of medical facilities related to skin disease available in the remote areas, patients usually ignore early symptoms which may worsen the situation as time progresses.
2. Lack of awareness related to skin care diseases.
3. It is hard to predict accurately for a dermatologist that from which type of skin disease patient is suffering from.
4. There is increase in skin disease problems because of ultra-violet rays.
5. There is no time for people to take care about their mental health.
6. Anxiety and depression issues are increasing because of unhealthy routine.

OBJECTIVE

The skin is the largest organ of the human body, which means that it can be an indicator of many different diseases. As a result, we are creating a multiclass deep learning model to distinguish between healthy skin and skin suffering from any disease. The machine learns itself and divide the data provided into the levels of prediction and in a very short period of time gives the accurate results, thereby promoting and supporting development of Dermatology. The other major problem is mental health disorder, so our aim is to reduce anxiety and depression rates in early life, we provide a meditation environment in the metaverse.

SCOPE

1. Provide awareness of upcoming skin related diseases.
2. Tracks your mental health.
3. Reduces hospitalization and expenses.
4. Saves time

Chapter 2: Literature Review

There is some previous research in field of skin disease prediction.

Paper Title	Author	Year of Publication	Technology Used	Results
Intelligent System for Skin Disease Prediction using Machine Learning Intelligent System for Skin Disease Prediction using Machine Learning	Ahmed A. Elngar, Amber Hayat, Rishabh Kumar, Prathamesh Churi	2021	Machine Learning (CNN, SVM,OpenCV)	For skin disease detection and prediction, the support vector machine is mostly used. The accuracy of SVM is around 80-90% depending upon the dataset used. Skin disease dataset is taken from UCI machine repository as it contains thousands of images for various skin diseases.

There is some previous research in field of detection of mental health disorder.

Paper Title	Author	Year of Publication	Technology Used	Results
Mental Health Prediction Using Machine	Jetli Chung and Jason Teo	2022	Machine Learning (regression, naïve bayes)	the documents and information related to the machine learning approaches that have been used by the researchers to

Learning: Taxonomy, Applications, and Challenges				conduct a prediction or diagnosis for mental health problems will be reviewed and discussed. Moreover, the performance of the machine learning algorithms used will be evaluated and analyzed.)e mental health problems will be categorized into several mental health disorders such as schizophrenia, anxiety and depression, bipolar disorder, posttraumatic stress disorder, and children's mental health problems.

Chapter 3: Proposed Methodology

To solve skin care disease problem:

It works by extracting features from the images and compares them to a database of skin diseases.

The Skin Disease Predicter can be used in the following ways:

1. Skin Diseases Diagnosis
2. Early Detection
3. Prevention
4. Treatment

To solve mental health disorder:

1. We will take input from user to check that he is facing any anxiety and depression issues or not.
2. Interactive talking with chatbot and meditation facility to resolve this problem.

Chapter 4: Technology Used

Android Studio: It is used to develop an android application.

XML and Kotlin: XML is a language for front end development of app and Kotlin is for backend development.

Firebase: To store the user data and provide authentication.

Retrofit API: It is used to fetch data from API.

Machine learning techniques-
Convolutional neural network (CNN): To detect the lesion on provided image of skin.
Regression and naive bayes: To detect any mental health disorder.

Augmented reality: To create virtual environment in real word for meditation.

Chapter-5: Diagrams

Skin lesion analyzer

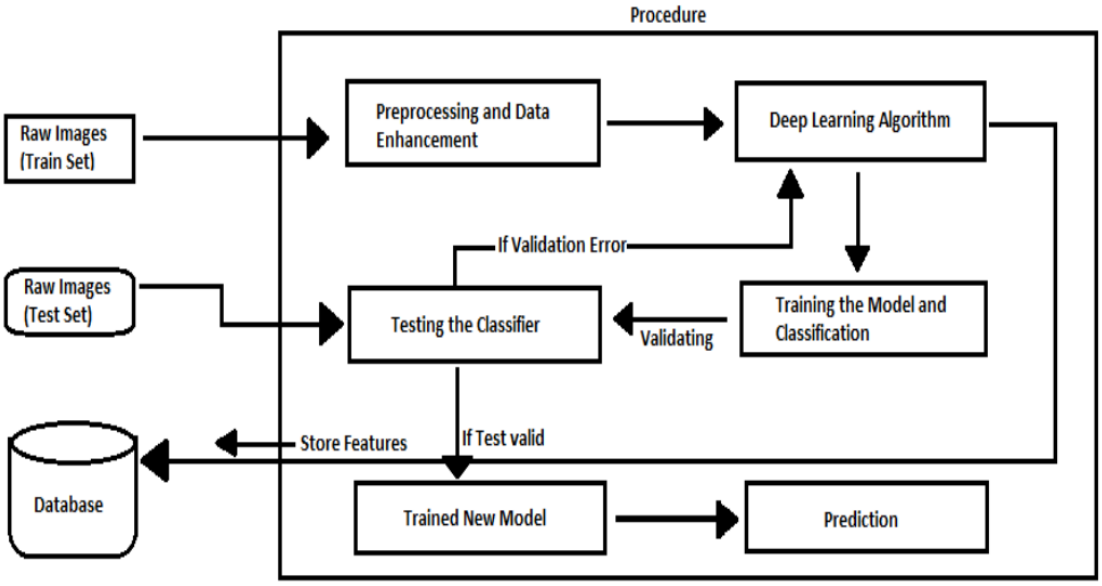

Fig 1.1

Mental health disorder detection

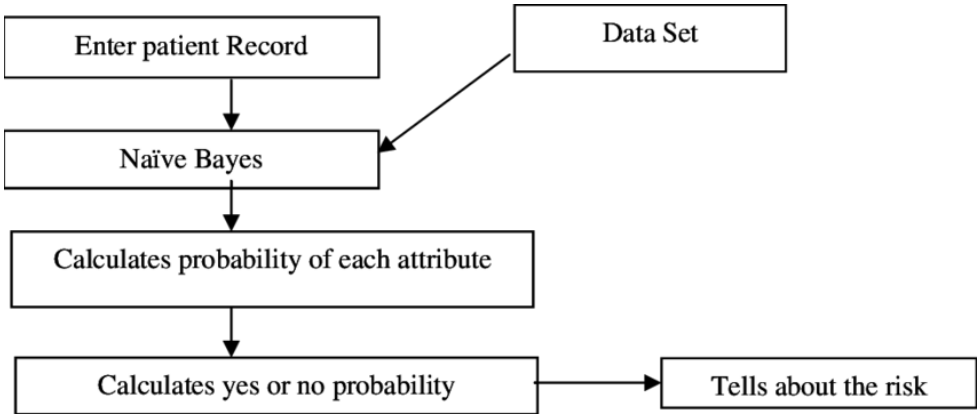

Fig 1.2

Chapter-6: Conclusion

Skin diseases are ranked as the fourth most common cause of human illness, but many still do not consult doctors. We presented a robust and automated method for the diagnosis of dermatological diseases. Treatments for skin are more effective and less disfiguring when found early. We should point out that it is to replace doctors because no machine can yet replace human input on analysis and intuition. Research in the European Society of Medical Oncology has shown for the first time that AI or ML is better than experienced dermatologists. There are many algorithms in ML, like Decision Tree, Random Forest, and Naive Bayes, that help find mental health disorders. These algorithms produce better and more accurate disease-related results. It will reduce people's costs and medical expenses. Our mental health tracker provides an AR/VR meditation facility so anyone can get rid of these depressive symptoms and lead a healthy life.

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