AI BASED DIABETES PREDICTION SYSTEM

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ABSTRACT

This paper presents an innovative approach to the development of an AI-based diabetes prediction system, leveraging deep learning and machine learning algorithms

The system combines multimodal data fusion, including electronic health records, wearable device data, genomics, and social determinants of health, to provide a comprehensive assessment of an individual's diabetes risk. Recurrent Neural Networks (RNNs)

PROBLEM STATEMENT

DEVELOPE AN AI POWERED DAIBETES PREDICTION SYSTEM THAT LEVERAGES MACHINE LEARNING ALGORITHM TO ANALYIZE MEDICAL DATA

DATA PREPROCESSING

Gather a diverse and comprehensive dataset containing relevant features for diabetes prediction. - Preprocess the data, which may include tasks like normalization, handling missing values, and feature engineering.

ENSEMBLE LEARNING METHODS

Use techniques like Random Forests, Gradient Boosting, or AdaBoost to create multiple models using subsets of the data. - Each model in the ensemble focuses on different aspects and learns from different parts of the data.

DEEP LEARNING algorithm

- Implement a deep learning model, perhaps a feedforward neural network or a recurrent neural network (RNN), to capture complex relationships within the data.

CODINGS

```python
# Import necessary libraries
import numpy as np
import pandas as pd
import tensorflow as tf
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import StandardScaler
from sklearn.ensemble import RandomForestClassifier
from sklearn.metrics import accuracy_score, classification_report
from sklearn.datasets import load_diabetes

# Load diabetes dataset (you may use your dataset)
diabetes = load_diabetes()
X, y = diabetes.data, diabetes.target

# Split data into training and testing sets
X_train, X_test, y_train, y_test = train_test_split(X, y, test_size=0.2, random_state=42)
```

THANKS!