

# Introduction to RMS

This project is a research initiative focused on developing accurate machine learning models for predicting medical conditions such as breast cancer, tooth decay, and osteoporosis. The primary goal is to ensure the health of society by providing robust and adaptable tools for medical professionals and researchers.

The purpose of developing this software in the field of medicine is to support individuals and groups interested in the intersection of medicine and information technology. By providing accurate and adaptable predictive models, the project aims to contribute to societal health and well-being.

# Packages and System Information

## Python

base64, tempfile, io , glob  
and more ...

## web

Flask - Flask\_Limiter -  
Flask\_Talisman and ...

## ML

pandas, sklearn , Numpy and ...



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# Breast Cancer Prediction

## 1 Data Source

The dataset is a CSV file containing breast cancer data.

## 2 Features

Mean radius, mean texture, mean perimeter, mean area, and mean smoothness of breast cell nuclei

## 3 Target Variable

Indicates whether the tumor is malignant or benign

## 4 Preprocessing

Data is scaled using 'StandardScaler'

## 5 Model

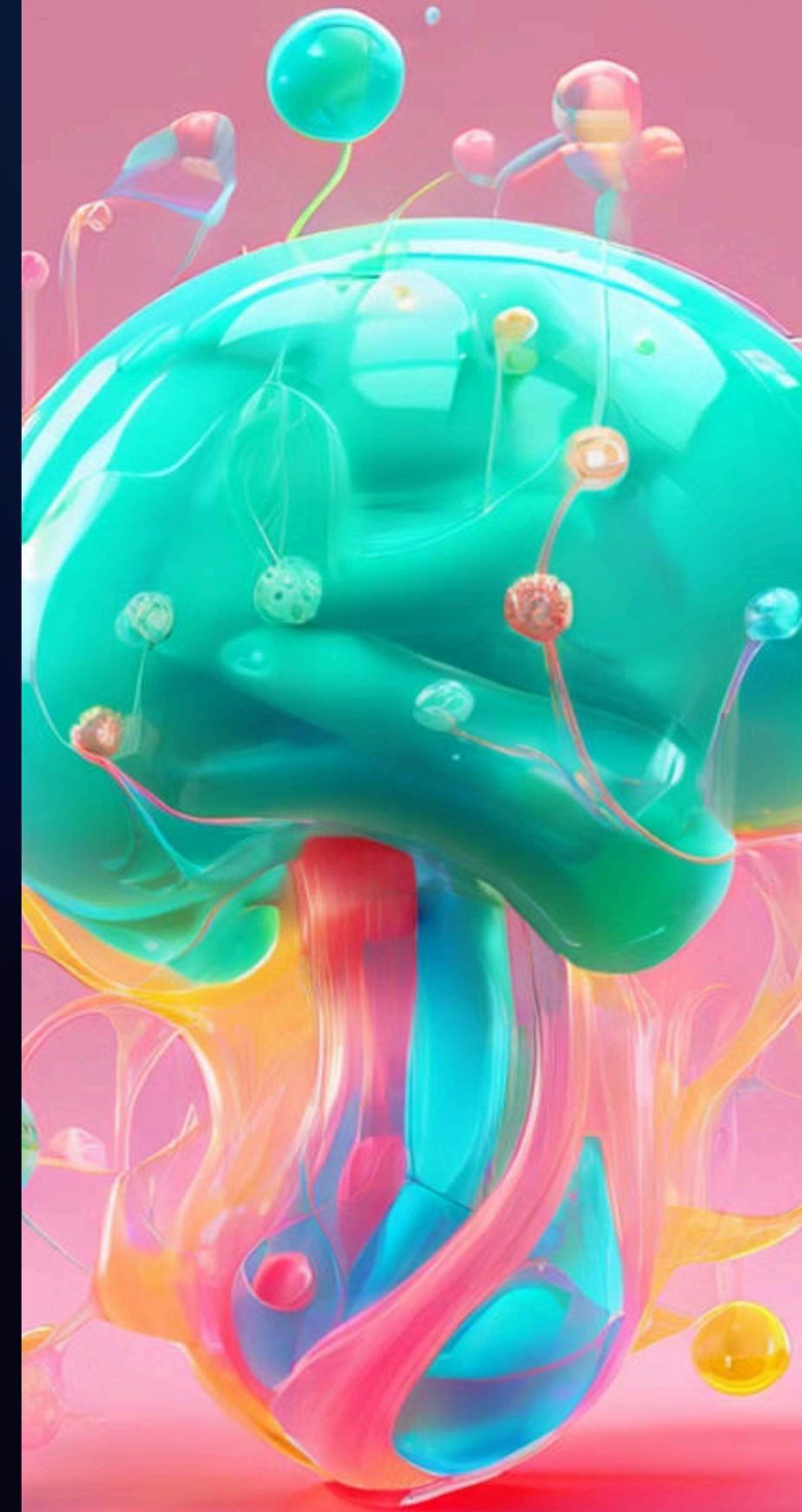
Random Forest Classifier

## 6 Training

Model is trained on the preprocessed data

## 7 Prediction

Model predicts the likelihood of the tumor being malignant or benign based on new data inputs



# Tooth Decay Prediction

## Data Source

The dataset is a CSV file containing tooth decay data

## Features

Age, diet, saliva flow, fluoride exposure, dental history, family history, socioeconomic status, dental visits, and dental X-rays

## Target Variable

Indicates whether tooth decay is present

## Preprocessing

Categorical features are encoded using `LabelEncoder` and data is scaled using `StandardScaler`

## Model

K-Nearest Neighbors (KNN) classifier

## Training

KNN classifier is trained on the entire dataset

## Prediction

Model predicts the likelihood of tooth decay based on new data inputs



# Osteoporosis Prediction

## 1 Data Source

The dataset is a CSV file containing osteoporosis data

## 3 Target Variable

Indicates whether osteoporosis is present

## 5 Model

Random Forest Classifier

## 7 Prediction

Model predicts the likelihood of osteoporosis based on new data inputs

## 2 Features

Age, gender, bone density, calcium intake, exercise frequency, and smoking status

## 4 Preprocessing

Categorical features like gender are encoded and data is scaled using `StandardScaler`

## 6 Training

Model is trained on the training data



# Applications



## Image Processing

Utilizes OpenCV and other libraries to process and analyze dental images



## DICOM Handling

Uses the pydicom library to handle DICOM files, which are common in medical imaging



# Donation

1

Mahak charity

<https://mahak-charity.org>

2

Supporting working children

<https://apcl.org.ir>

3

national breast cancer

[Join our community of healthcare professionals, researchers, and advocates working towards a healthier future.](#)



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# About



**Website**

[kooshayeganeh.github.io](https://kooshayeganeh.github.io)



**GitHub**

<https://github.com/KooshayEganeh>



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