Project: Nutrigenoscope

Prerequisites

1. Python 3.8 or above.
2. Required Python libraries:
    a. Flask
    b. pandas
    c. numpy
    d. sklearn
    e. joblib
    f. CatBoost

3. Datasets:
    a. DR1IFF_J.csv
    b. DR1TOT_J (1).xpt
    c. DR2TOT_J (2).xpt
    d. FOLATE_J.xpt
    e. VID_J (1).xpt

Installation

1. Clone the repository.
2. Navigate to the project directory and install dependencies:

pip install -r requirements.txt

3. Ensure the datasets are placed in the paths specified in the app.py scripts.

Usage

Running the Application

1. Train the models (if not pre-trained):

python training.py

2. Start the Flask server:

python app.py

3. The server will be available at http://127.0.0.1:5000.

API Endpoints

1. Predict Trait Frequency

- **Endpoint**: /predict_ • **Method**: POST
- **Description**: Predicts the folate and vit dificiencies and give food suggestions.
- **Input JSON Example**:

```
{

  "RIAGENDR": 2,      // Gender (1: Male, 2: Female)

  "RIDAGEYR": 45,     // Age (in years)

  "DR1IFOLA": 300,    // Folate intake (Day 1)

  "DR1IVD": 15        // Vitamin D intake (Day 1)

}
```

- **Response Example**:

```
 Predicted folate and Vitamin D levels.
 Alerts if the predicted levels are below predefined thresholds.
 Top food recommendations to increase folate or Vitamin D levels if needed
B": 0.65 }
```