Parkinson's Disease Detection Using Support Vector Machine on MRI Scans

Description:

Parkinson's disease is a progressive neurodegenerative disorder affecting movement and coordination. Early detection is essential for effective treatment. This project employs a Support Vector Machine (SVM) model to classify MRI scans and detect Parkinson's disease. The system processes MRI images to extract relevant features before passing them to the trained SVM model for classification. A Flask-based backend handles model inference, while a frontend built with HTML, CSS, and JavaScript provides a user-friendly interface. The API endpoints are tested using Postman to ensure smooth interaction between the frontend and backend. The project aims to assist medical professionals in early diagnosis by leveraging AI for medical imaging analysis.

Tech Stack:

Frontend:

- HTML, CSS, JavaScript (for UI/UX) **Backend:**
- Flask (for API development and model deployment) **Machine**

Learning Model:

- Python (for data processing and model training)
- Support Vector Machine (SVM) (for classification)
- Scikit-learn (for model training and evaluation)
- OpenCV (cv2) (for MRI image processing)
- NumPy, Pandas (for data handling) **API Testing &**

Deployment:

- Postman (for API testing)

Process to Run the Project

Step-1 :Open the project folder in VS Code

Step-2 : cd to the folder

Step-3 : install all the dependencies by executing the command

pip install -r requirements.txt

Step-4: Start the Flask server by using the following command

python app.py

Step -5 : open the local host link that is

Ex: http://127.0.0.1:5000

Step-6: Upload the MRI of the patient and wait for the result

Sample Result output: