

Build Python Code:

```
terminal Help predict.py - app - Visual Studio Code
predict.py X
utils > predict.py > ...
1 import pickle
2 import cv2
3 from skimage import feature
4
5 waveModel = pickle.load(open("ML/models/spiralModel.pkl", "rb"))
6 spiralModel = pickle.load(open("ML/models/spiralModel.pkl", "rb"))
7
8 code2cat = {0:"healthy", 1:"parkinson"}
9
10
11 def processImage(imagePath):
12     image = cv2.imread(imagePath)
13     image = cv2.cvtColor(image, cv2.COLOR_BGR2GRAY)
14     image = cv2.resize(image, (200, 200))
15     image = cv2.threshold(image, 0, 255, cv2.THRESH_BINARY_INV | cv2.THRESH_OTSU) [1]
16     return image
17
18
19 def quantify_image(image):
20     features = feature.hog(image, orientations=9, pixels_per_cell=(13, 13), cells_per_block=(4, 4), transform_sqrt=True, block_norm="L1")
21     return features
22
23
24 def predict(imgPath, modelType):
25     img = processImage(imgPath)
26     imgFeatures = quantify_image(img)
27
28     if modelType=="spiral":
29         pre = spiralModel.predict([imgFeatures])
30
31     if modelType=="wave":
32         pre = spiralModel.predict([imgFeatures])
33
34     return code2cat[pre[0]]
```

Python Flask code:

```
terminal Help app.py - app - Visual Studio Code
app.py X
app.py > ...
1 from flask import Flask, request, redirect, flash, send_from_directory, render_template, send_file
2
3
4
5 app = Flask(__name__, static_url_path='/')
6 app.config['SECRET_KEY'] = 'secret_key'
7 app.config['UPLOAD_FOLDER'] = 'static/uploads/'
8
9
10
```

```
terminal Help main.py - app - Visual Studio Code
main.py X
main.py > ...
1 from app import *
2 import os
3 from utils.predict import predict
4
5 @app.route("/", methods=["GET"])
6 def index():
7     return render_template('index.html')
8
9
10
11 @app.route("/signin", methods=["POST", "GET"])
12 def signin():
13     if request.method=="GET":
14         return render_template('signin.html')
15
16
17 @app.route("/signup", methods=["POST", "GET"])
18 def signup():
19     if request.method=="GET":
20         return render_template('signup.html')
21
22
23 @app.route("/upload", methods=["POST", "GET"])
24 def upload():
25     if request.method=="GET":
26         return render_template('upload.html')
27     if request.method=="POST":
28         imgType = request.form["type"]
29         file = request.files["file"]
30
31         imgPath = os.path.join(app.config['UPLOAD_FOLDER'], "upImage.jpg")
32         file.save(imgPath)
33         print(imgPath)
34         prediction = predict(imgPath, imgType)
35         return render_template('result.html', prediction=prediction, path="/uploads/upImage.jpg")
36
```