

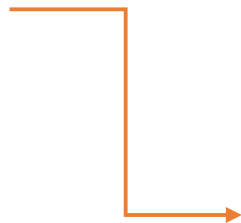
The Artificial Intelligence trainer

เทรนเนอร์ อัจฉริยะ

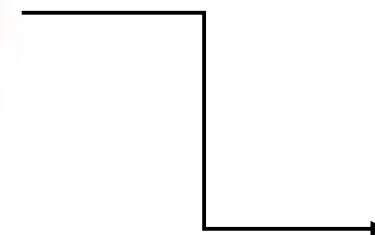
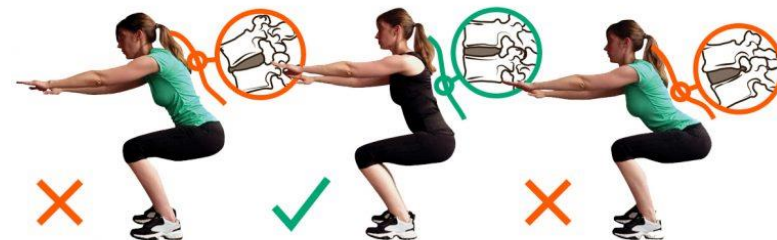
Presented by: Aditep Campira



Input
(Webcam , Pictures , Vdo)
(Desktop application)

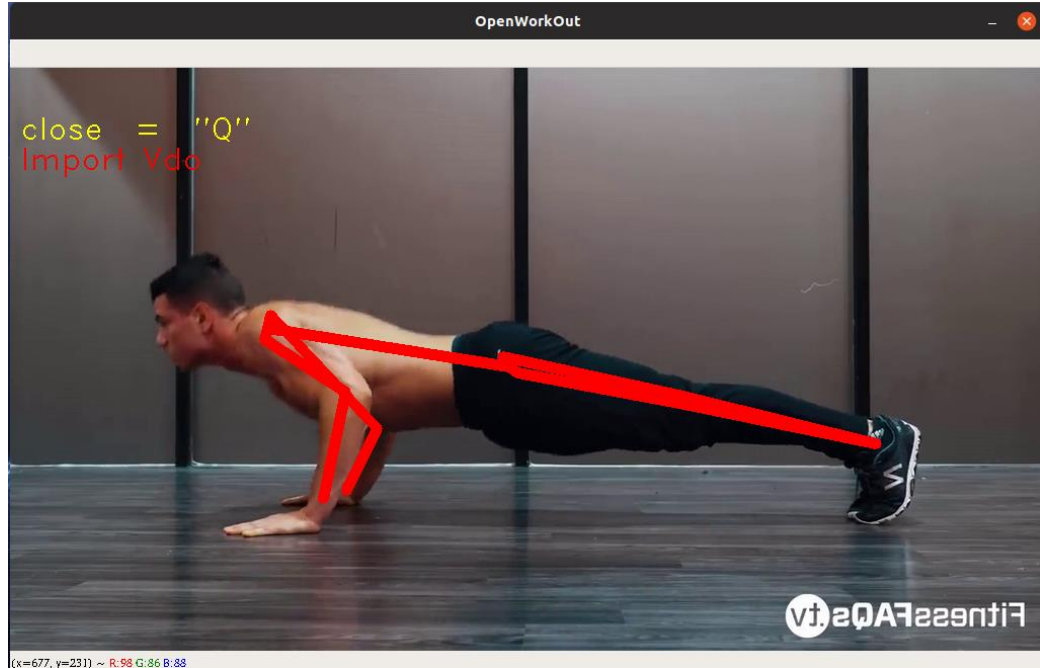


Process
(AI)



Output

ทำอะไร ?



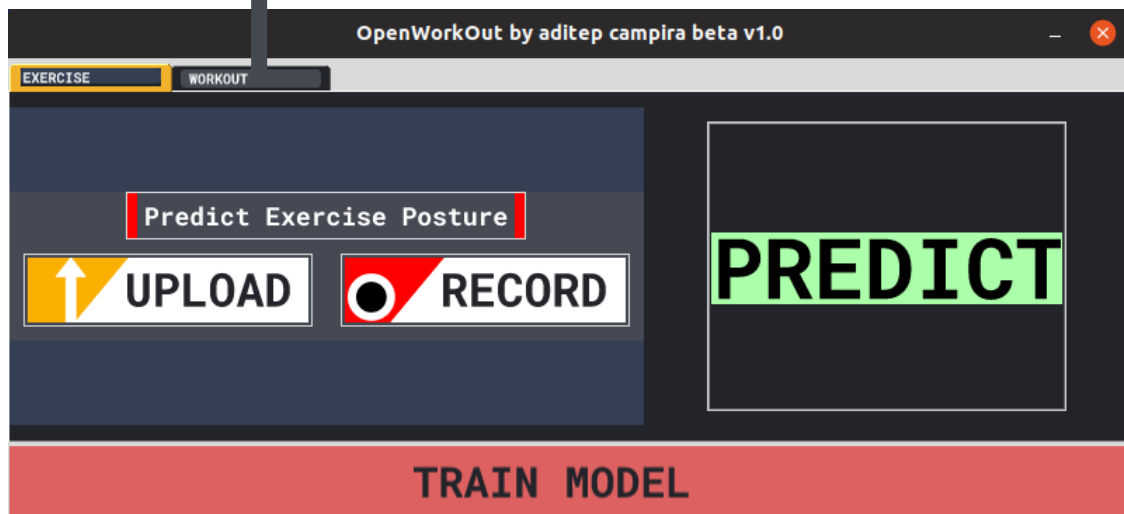
เล่นถูกไหม ?

PUSH-UP

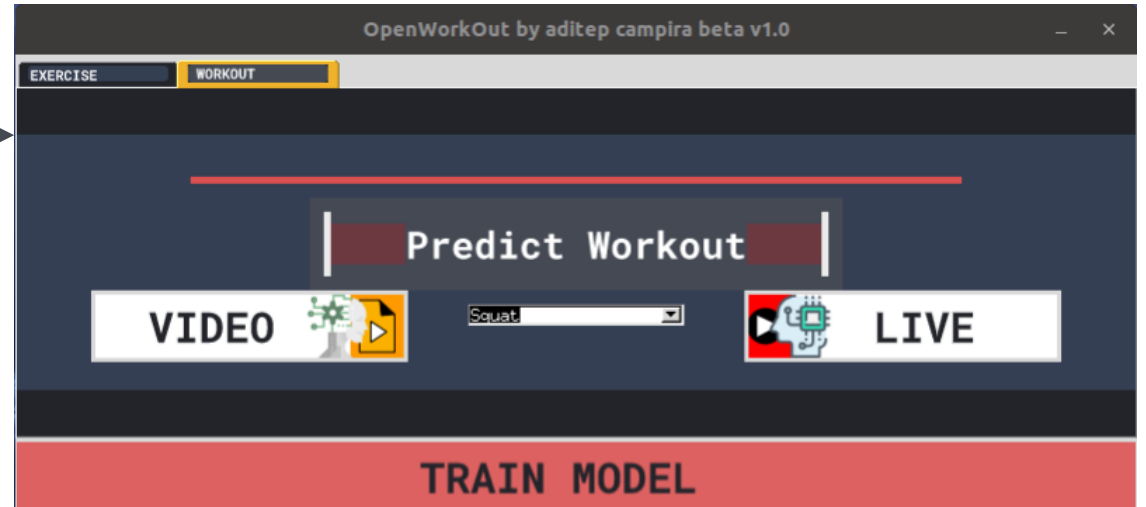


PUSH-UP

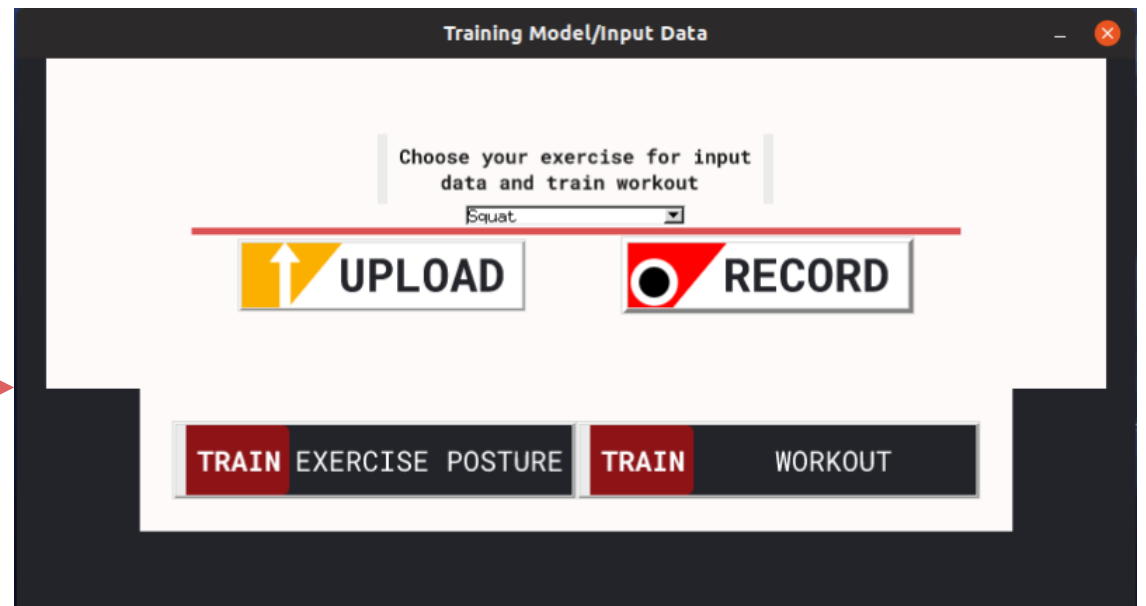




ทำนายชื่อ ท่าออกกำลังกาย

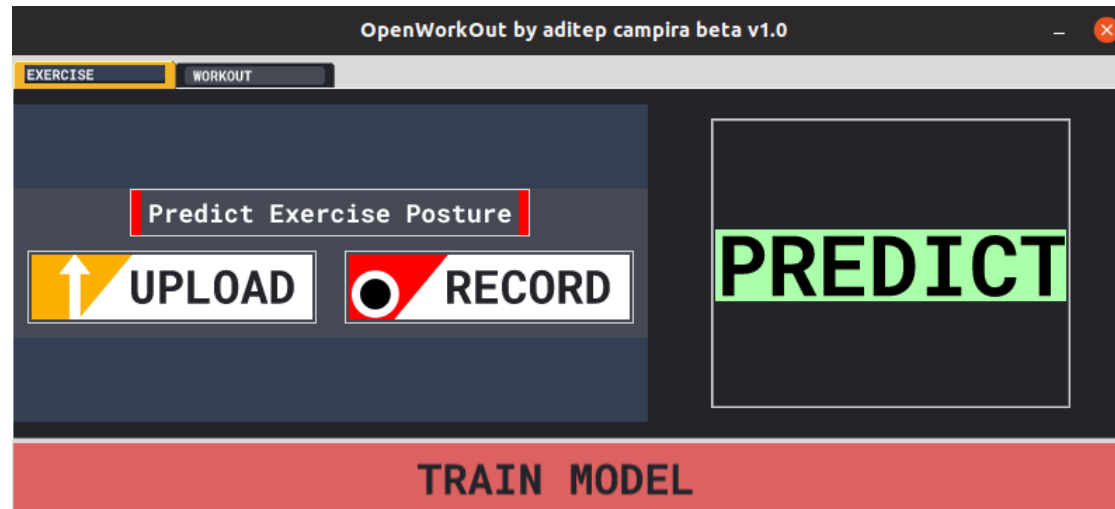


ตรวจสอบความถูกต้อง การเคลื่อนไหว



input data / Train model

GUI

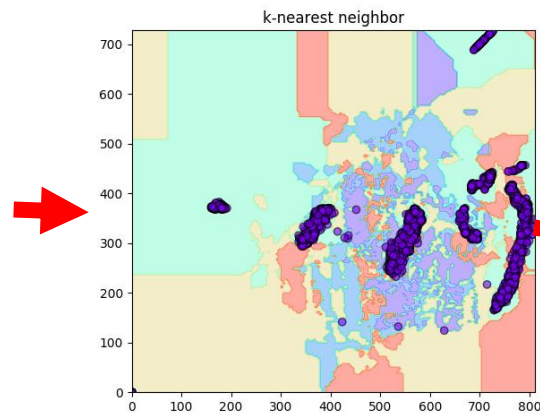
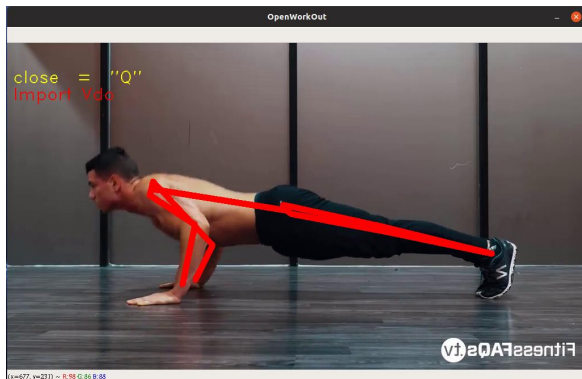


Input

Model

ทำนายชื่อท่า

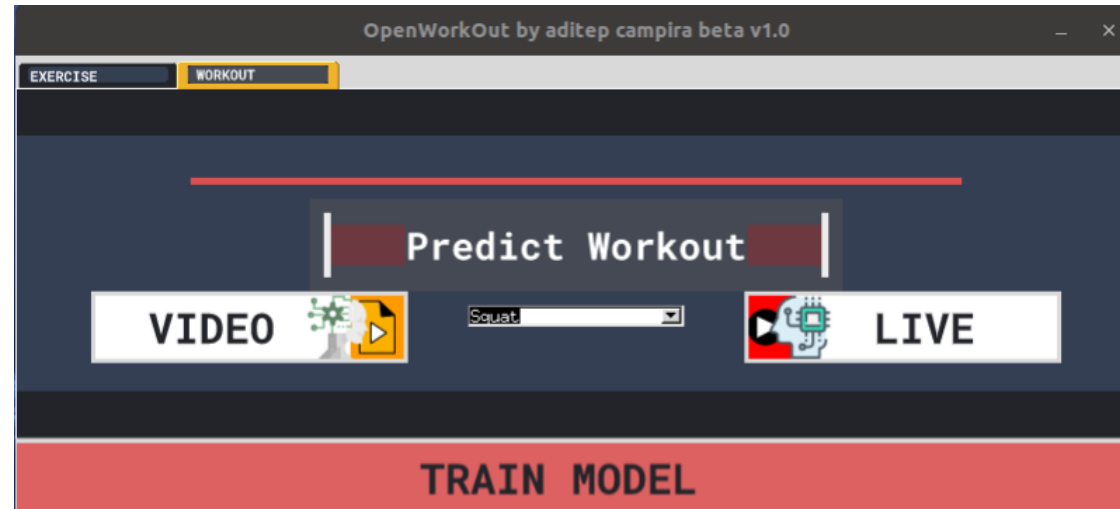
Output



Dumbbell shoulder press
Barbell Curl
Dead lift
Pushup
Squat



GUI



Input

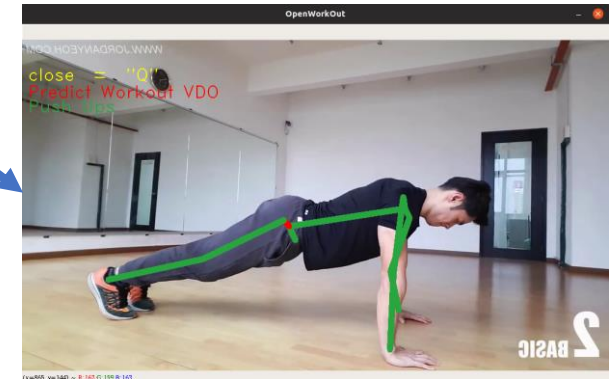
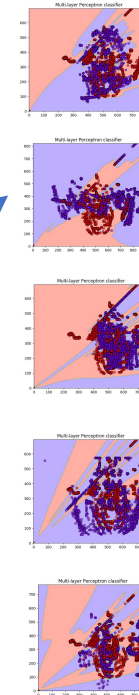
เลือกท่าที่จะออก

Model

Output

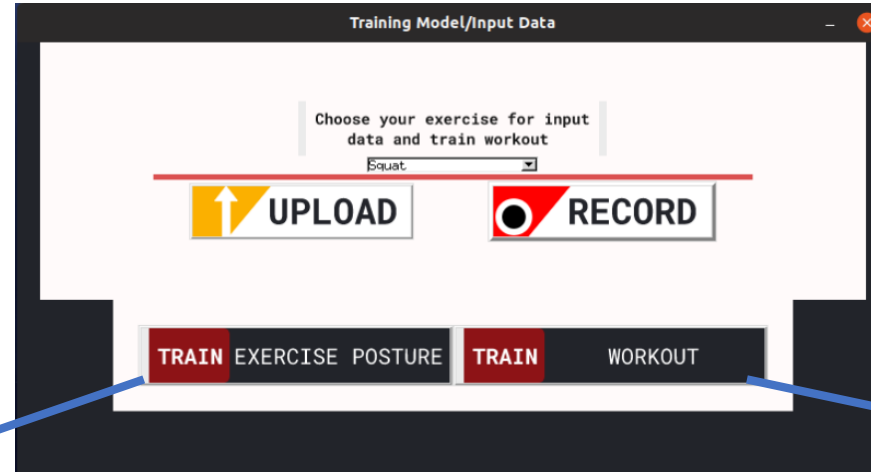
Video
Webcam

Dumbbell shoulder press
Barbell Curl
Dead lift
Pushup
Squat



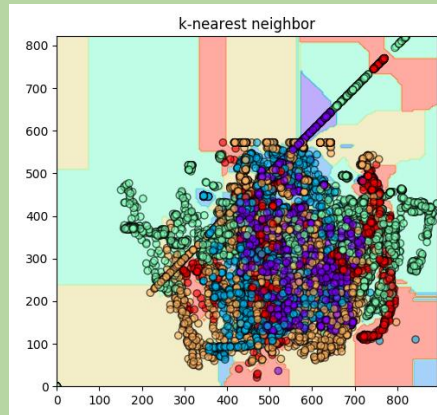
— ผิด
— ถูก

GUI



scikit-learn (fit)

Model
knn



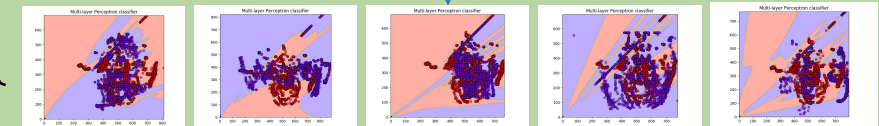
Data Set

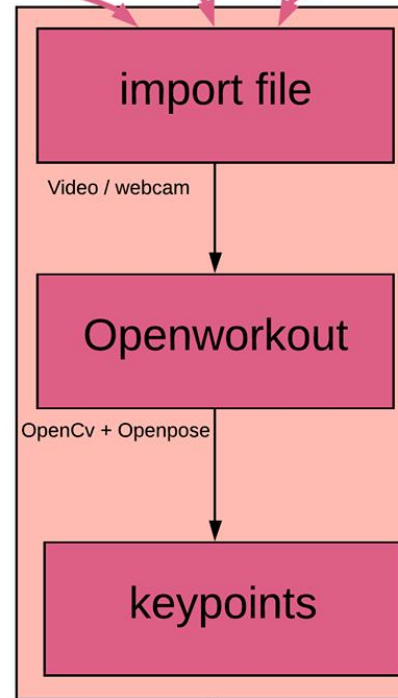
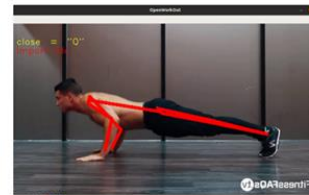
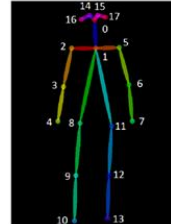
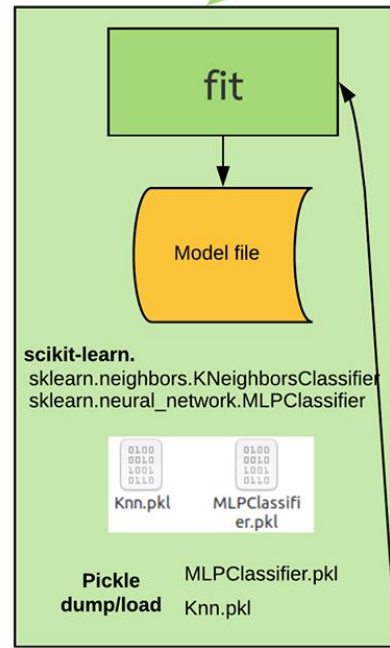
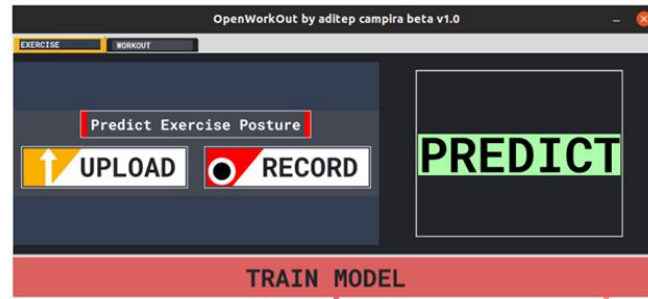
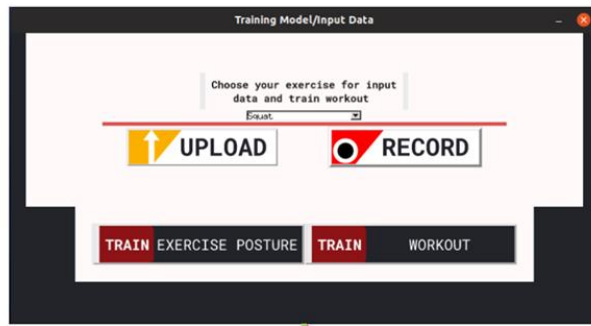
Dumbbell shoulder press
Barbell Curl
Dead lift
Pushup
Squat

scikit-learn (fit)

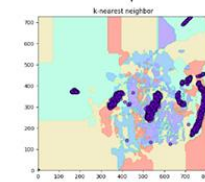
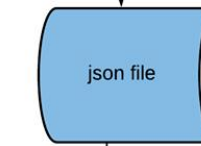
Multilayer perceptron classifier

Model





Predict

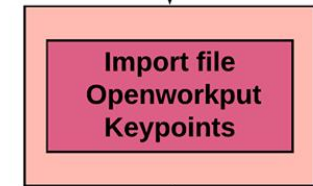


scikit-learn.
matplotlib.pyplot

```
[2 0 4 4 3 2 1 3 2 5 2 2 2 1]
[0 1 4 0 3 2 1 2 2 2 2 2 1 0]
```

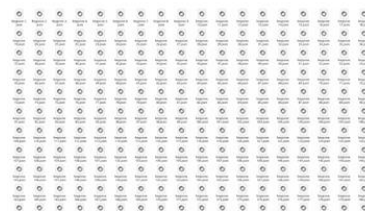


Predict

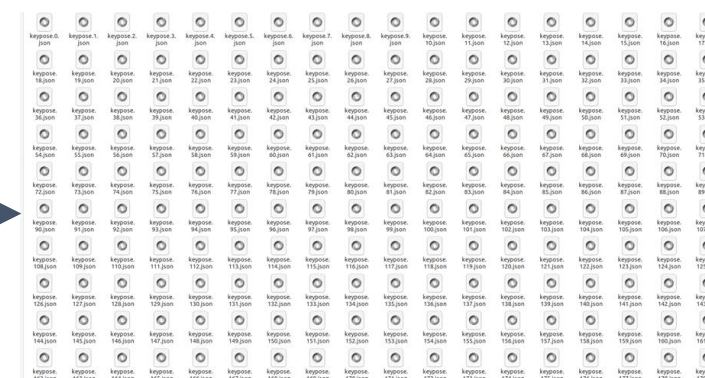
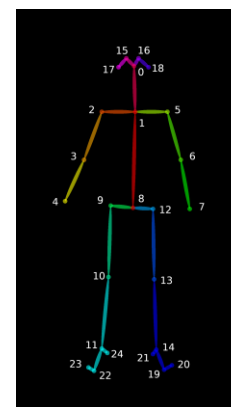
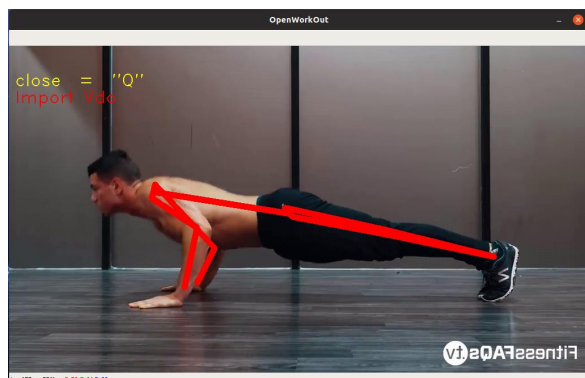


```
[0 0 0 0 0 1 0 0 0 0 0 0 0 0]
```

cv2.line
0 1



Video
Webcam



OpenCv + Openpose

Key Points

keypose.0.json
dataset

scikit-learn (fit)

Algorithms

Multilayer perceptron classifier

C-Support Vector

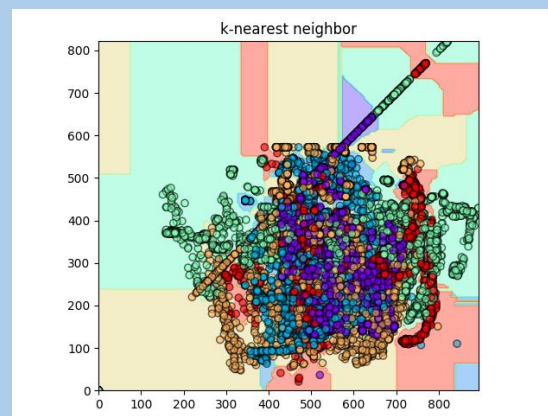
RandomForest

DecisionTree

K - means

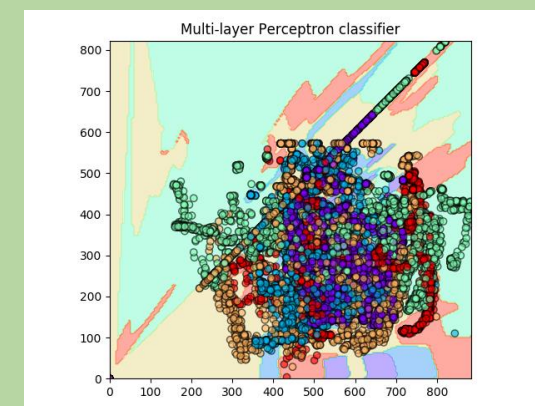
k-nearest neighbor

k-nearest neighbor



accuracy_score = 0.7322513591301567

Multilayer perceptron classifier

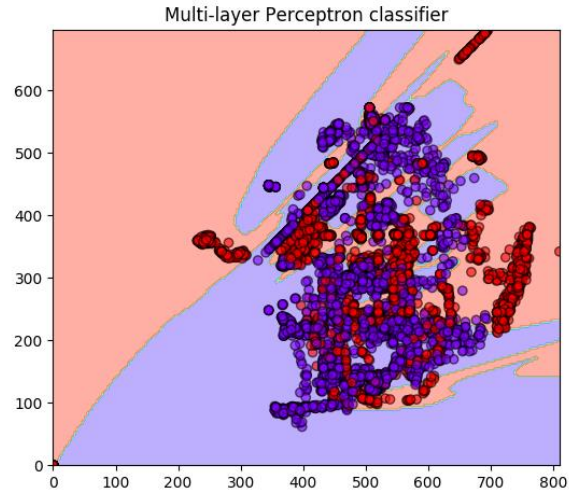


accuracy_score = 0.666053725615606

Multilayer perceptron classifier

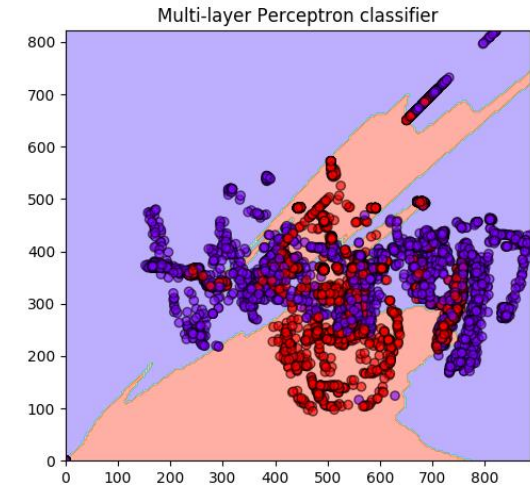
Barbell Curl

accuracy_score = 0.8398814749780509



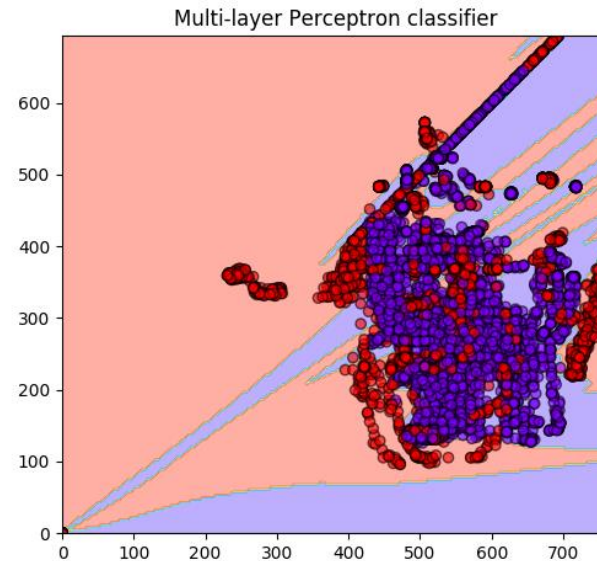
Pushup

accuracy_score = 0.7321693121693121



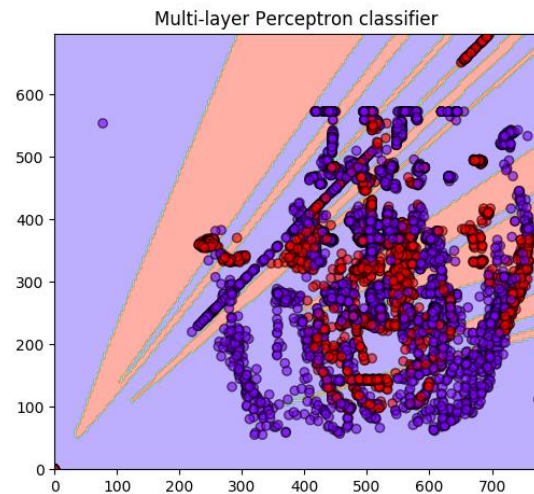
Squat

accuracy_score = 0.7964561145795079



Dumbbell shoulder press

accuracy_score = 0.635881202867517



Dead lift

accuracy_score = 0.8371520078837152

