

## ONLY 2 COMBINATIONS

### Sensors: 8 and 11

Test accuracy: 0.63  
 Test accuracy: 0.643  
 Test accuracy: 0.637  
 Test accuracy: 0.625  
 Test accuracy: 0.621  
 Mean accuracy: 0.631  
 Standard deviation: 0.008

Set 8 and 11



### Sensors: 12 and 11

Test accuracy: 0.737  
 Test accuracy: 0.727  
 Test accuracy: 0.719  
 Test accuracy: 0.756  
 Test accuracy: 0.73  
 Mean accuracy: 0.734  
 Standard deviation: 0.012

Set 12 and 11



Set 1 and 12

### Sensors: 1 and 12

Test accuracy: 0.754  
 Test accuracy: 0.774  
 Test accuracy: 0.757  
 Test accuracy: 0.769  
 Test accuracy: 0.752  
 Mean accuracy: 0.761  
 Standard deviation: 0.009



### Sensors: 3 and 7

Test accuracy: 0.843  
 Test accuracy: 0.836  
 Test accuracy: 0.846  
 Test accuracy: 0.842  
 Test accuracy: 0.843  
 Mean accuracy: 0.842  
 Standard deviation: 0.003

Set 3 and 7



Set 8 and 1

### Sensors: 8 and 1

Test accuracy: 0.692  
 Test accuracy: 0.701  
 Test accuracy: 0.671  
 Test accuracy: 0.699  
 Test accuracy: 0.693  
 Mean accuracy: 0.691  
 Standard deviation: 0.01



### Sensors: 7 and 10

Test accuracy: 0.774  
 Test accuracy: 0.775  
 Test accuracy: 0.787  
 Test accuracy: 0.765  
 Test accuracy: 0.753  
 Mean accuracy: 0.771  
 Standard deviation: 0.011

Set 7 and 10



### ONLY 4 COMBINATIONS

#### Selected sensors: 1, 12, 11, 8

Test accuracy: 0.874  
 Test accuracy: 0.863  
 Test accuracy: 0.873  
 Test accuracy: 0.87  
 Test accuracy: 0.881  
 Mean accuracy: 0.872  
 Standard deviation: 0.006



#### Selected sensors: 3, 7, 8, 11

Test accuracy: 0.891  
 Test accuracy: 0.897  
 Test accuracy: 0.913  
 Test accuracy: 0.905  
 Test accuracy: 0.895  
 Mean accuracy: 0.9  
 Standard deviation: 0.008



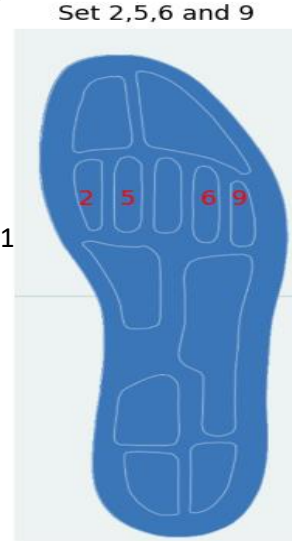
#### Selected sensors: 1, 12, 3, 7

Test accuracy: 0.925  
 Test accuracy: 0.937  
 Test accuracy: 0.931  
 Test accuracy: 0.938  
 Test accuracy: 0.929  
 Mean accuracy: 0.932  
 Standard deviation: 0.005



#### Selected sensors: 2, 5, 6, 9

Test accuracy: 0.862  
 Test accuracy: 0.863  
 Test accuracy: 0.863  
 Test accuracy: 0.863  
 Test accuracy: 0.864  
 Mean accuracy: 0.863  
 Standard deviation: 0.001



## ONLY 6 COMBINATIONS

### Selected sensors: 1, 2, 4, 6, 9, 12

Test accuracy: 0.921

Test accuracy: 0.936

Test accuracy: 0.923

Test accuracy: 0.916

Test accuracy: 0.926

Mean accuracy: 0.924

Standard deviation: 0.007

Set 1,2,4,6,9 and 12



### Selected sensors: 2, 4, 6, 5, 9, 3

Test accuracy: 0.929

Test accuracy: 0.941

Test accuracy: 0.939

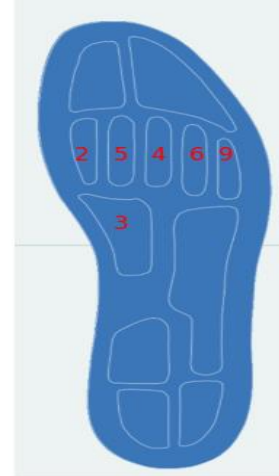
Test accuracy: 0.937

Test accuracy: 0.934

Mean accuracy: 0.936

Standard deviation: 0.004

Set 2,4,6,9,5 and 3



### Selected sensors: 2, 4, 5, 9, 3, 7

Test accuracy: 0.945

Test accuracy: 0.937

Test accuracy: 0.954

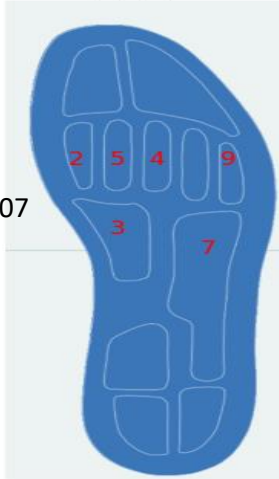
Test accuracy: 0.937

Test accuracy: 0.939

Mean accuracy: 0.942

Standard deviation: 0.007

Set 2,4,5,9,3 and 7



### Selected sensors: 3, 7, 8, 10, 11

Test accuracy: 0.911

Test accuracy: 0.92

Test accuracy: 0.919

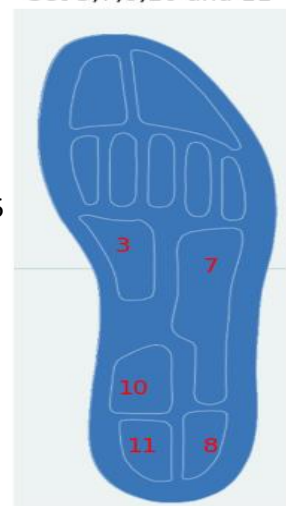
Test accuracy: 0.923

Test accuracy: 0.925

Mean accuracy: 0.919

Standard deviation: 0.005

Set 3,7,8,10 and 11



### Selected sensors: 2, 4, 6, 5, 9, 7

Test accuracy: 0.94

Test accuracy: 0.926

Test accuracy: 0.931

Test accuracy: 0.93

Test accuracy: 0.934

Mean accuracy: 0.932

Standard deviation: 0.005

Set 2,4,6,9,5 and 7



## ONLY 8 SENSORS COMBINATIONS

### Selected sensors: 1, 2, 4, 5, 6, 9, 12, 3

Test accuracy: 0.958 Set 1,2,4,5,6,9,12 and 3

Test accuracy: 0.953

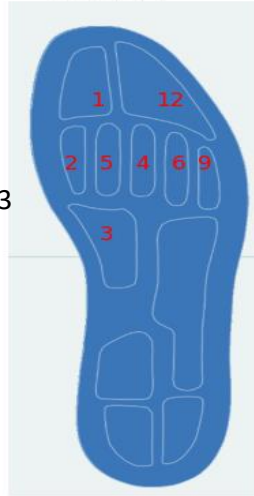
Test accuracy: 0.951

Test accuracy: 0.953

Test accuracy: 0.95

Mean accuracy: 0.953

Standard deviation: 0.003



### Selected sensors: 1, 2, 4, 5, 6, 9, 12, 8

Test accuracy: 0.949 Set 1,2,4,5,6,9,12 and 8

Test accuracy: 0.958

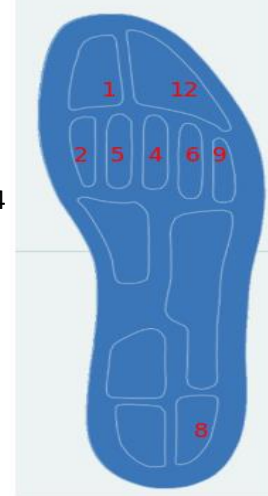
Test accuracy: 0.955

Test accuracy: 0.949

Test accuracy: 0.953

Mean accuracy: 0.953

Standard deviation: 0.004



### Selected sensors: 1, 2, 4, 5, 6, 9, 12, 7

Test accuracy: 0.949 Set 1,2,4,5,6,9,12 and 7

Test accuracy: 0.943

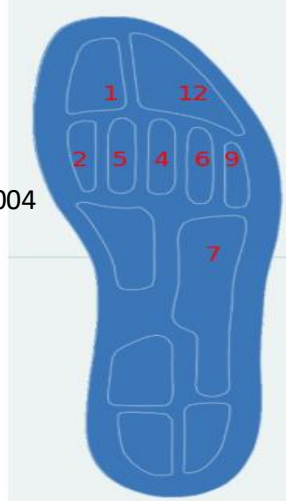
Test accuracy: 0.954

Test accuracy: 0.95

Test accuracy: 0.954

Mean accuracy: 0.95

Standard deviation: 0.004



### Selected sensors: 1, 2, 4, 5, 6, 9, 8, 11

Test accuracy: 0.937 Set 1,2,4,6,9,8 and 11

Test accuracy: 0.946

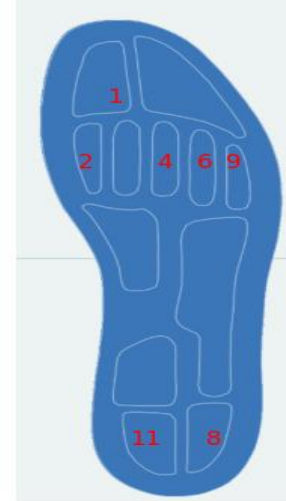
Test accuracy: 0.944

Test accuracy: 0.945

Test accuracy: 0.944

Mean accuracy: 0.943

Standard deviation: 0.003



### Selected sensors: 1, 2, 4, 5, 6, 9, 12, 11

Test accuracy: 0.955 Set 1,2,4,5,6,9,12 and 11

Test accuracy: 0.943

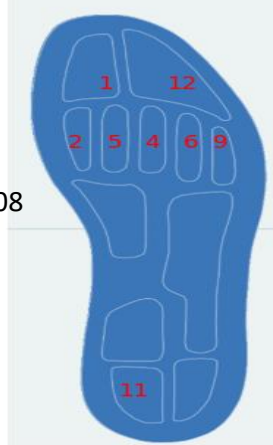
Test accuracy: 0.957

Test accuracy: 0.951

Test accuracy: 0.937

Mean accuracy: 0.949

Standard deviation: 0.008



# ONLY 10 SENSORS COMBINATIONS

## Selected sensors: 1, 12, 2, 5, 4, 6, 9, 3, 7, 10

Test accuracy: 0.965 Set 1,12,2,5,4,6,9,3,7 and 10  
 Test accuracy: 0.955  
 Test accuracy: 0.971  
 Test accuracy: 0.97  
 Test accuracy: 0.967  
 Mean accuracy: 0.966  
 Standard deviation: 0.006



## Selected sensors: 1, 12, 2, 5, 4, 6, 9, 7, 8, 10

Test accuracy: 0.969 Set 1,12,2,5,4,6,9,7,8 and 10  
 Test accuracy: 0.967  
 Test accuracy: 0.955  
 Test accuracy: 0.959  
 Test accuracy: 0.968  
 Mean accuracy: 0.964  
 Standard deviation: 0.006



## Selected sensors: 1, 12, 2, 5, 4, 6, 9, 3, 8, 10

Test accuracy: 0.968 Set 1,12,2,5,4,6,9,3,8 and 10  
 Test accuracy: 0.964  
 Test accuracy: 0.961  
 Test accuracy: 0.96  
 Test accuracy: 0.961  
 Mean accuracy: 0.963  
 Standard deviation: 0.003



## Selected sensors: 8, 11, 2, 5, 4, 6, 9, 3, 7, 10

Test accuracy: 0.961 Set 8,11,2,5,4,6,9,3,7 and 10  
 Test accuracy: 0.957  
 Test accuracy: 0.967  
 Test accuracy: 0.957  
 Test accuracy: 0.961  
 Mean accuracy: 0.961  
 Standard deviation: 0.004



## ALL 12 SENSORS

Test accuracy: 0.971

Test accuracy: 0.968

Test accuracy: 0.963

Test accuracy: 0.969

Test accuracy: 0.977

Mean accuracy: 0.97

Standard deviation: 0.005

All sensors





USE OF SINGLE SENSORS

SENSOR 1

Test accuracy for sensor 1: 0.457  
Test accuracy for sensor 1: 0.457  
Test accuracy for sensor 1: 0.461  
Test accuracy for sensor 1: 0.468  
Test accuracy for sensor 1: 0.473  
Mean accuracy for sensor 1: 0.463  
Standard deviation for sensor 1: 0.007

Sensor 1



SENSOR 2

Test accuracy for sensor 2: 0.477  
Test accuracy for sensor 2: 0.488  
Test accuracy for sensor 2: 0.485  
Test accuracy for sensor 2: 0.487  
Test accuracy for sensor 2: 0.481  
Mean accuracy for sensor 2: 0.484  
Standard deviation for sensor 2: 0.004

Sensor 2



SENSOR 3

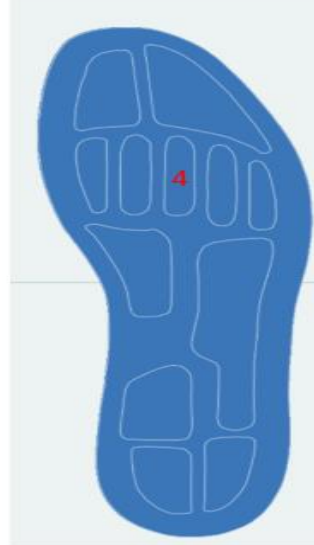
Test accuracy for sensor 3: 0.629  
Test accuracy for sensor 3: 0.654  
Test accuracy for sensor 3: 0.645  
Test accuracy for sensor 3: 0.636  
Test accuracy for sensor 3: 0.659  
Mean accuracy for sensor 3: 0.645  
Standard deviation for sensor 3: 0.011

Sensor 3

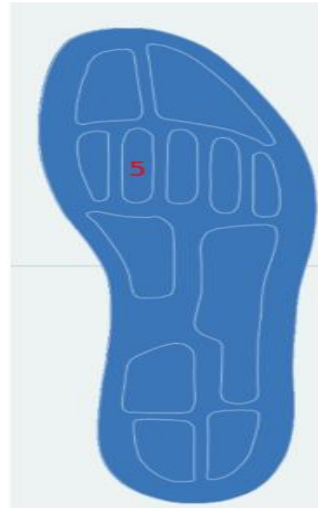


**SENSOR 4**

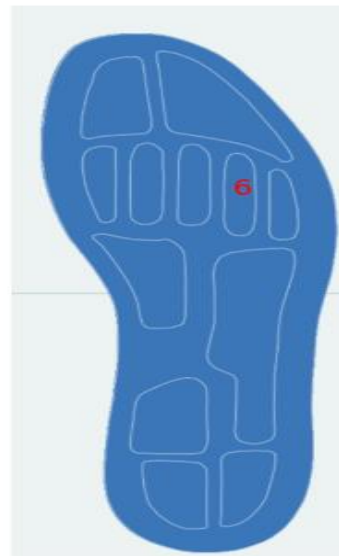
Test accuracy for sensor 4: 0.429  
Test accuracy for sensor 4: 0.437  
Test accuracy for sensor 4: 0.411  
Test accuracy for sensor 4: 0.44  
Test accuracy for sensor 4: 0.425  
Mean accuracy for sensor 4: 0.428  
Standard deviation for sensor 4: 0.01

**Sensor 4****SENSOR 5**

Test accuracy for sensor 5: 0.502  
Test accuracy for sensor 5: 0.507  
Test accuracy for sensor 5: 0.521  
Test accuracy for sensor 5: 0.506  
Test accuracy for sensor 5: 0.497  
Mean accuracy for sensor 5: 0.507  
Standard deviation for sensor 5: 0.008

**Sensor 5****SENSOR 6**

Test accuracy for sensor 6: 0.448  
Test accuracy for sensor 6: 0.441  
Test accuracy for sensor 6: 0.453  
Test accuracy for sensor 6: 0.45  
Test accuracy for sensor 6: 0.443  
Mean accuracy for sensor 6: 0.447  
Standard deviation for sensor 6: 0.004

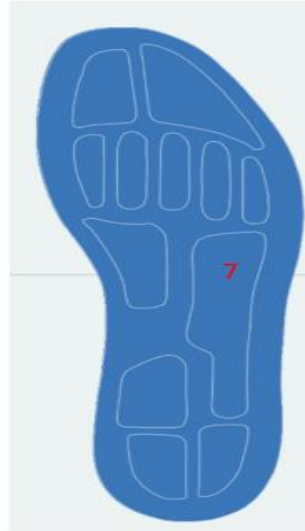
**Sensor 6**



**SENSOR 7**

Test accuracy for sensor 7: 0.56  
Test accuracy for sensor 7: 0.564  
Test accuracy for sensor 7: 0.578  
Test accuracy for sensor 7: 0.554  
Test accuracy for sensor 7: 0.563  
Mean accuracy for sensor 7: 0.564  
Standard deviation for sensor 7: 0.008

Sensor 7

**SENSOR 8**

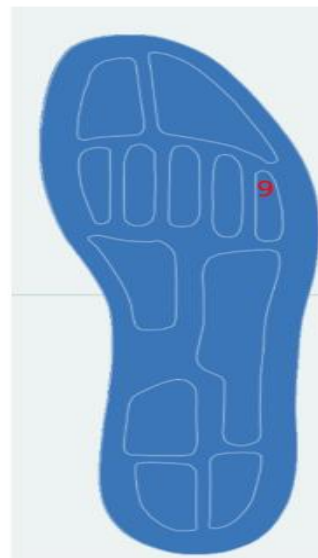
Test accuracy for sensor 8: 0.405  
Test accuracy for sensor 8: 0.433  
Test accuracy for sensor 8: 0.429  
Test accuracy for sensor 8: 0.418  
Test accuracy for sensor 8: 0.394  
Mean accuracy for sensor 8: 0.416  
Standard deviation for sensor 8: 0.015

Sensor 8

**SENSOR 9**

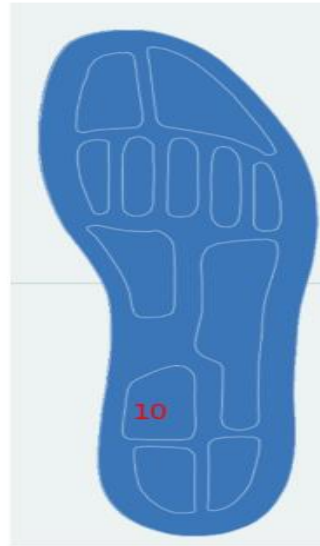
Test accuracy for sensor 9: 0.47  
Test accuracy for sensor 9: 0.479  
Test accuracy for sensor 9: 0.487  
Test accuracy for sensor 9: 0.463  
Test accuracy for sensor 9: 0.471  
Mean accuracy for sensor 9: 0.474  
Standard deviation for sensor 9: 0.008

Sensor 9



**SENSOR 10**

Test accuracy for sensor 10: 0.473  
Test accuracy for sensor 10: 0.47  
Test accuracy for sensor 10: 0.473  
Test accuracy for sensor 10: 0.477  
Test accuracy for sensor 10: 0.475  
Mean accuracy for sensor 10: 0.474  
Standard deviation for sensor 10: 0.003

**Sensor 10****SENSOR11**

Test accuracy for sensor 11: 0.457  
Test accuracy for sensor 11: 0.449  
Test accuracy for sensor 11: 0.466  
Test accuracy for sensor 11: 0.436  
Test accuracy for sensor 11: 0.473  
Mean accuracy for sensor 11: 0.456  
Standard deviation for sensor 11: 0.013

**Sensor 11****SENSOR 12**

Test accuracy for sensor 12: 0.542  
Test accuracy for sensor 12: 0.538  
Test accuracy for sensor 12: 0.544  
Test accuracy for sensor 12: 0.553  
Test accuracy for sensor 12: 0.568  
Mean accuracy for sensor 12: 0.549  
Standard deviation for sensor 12: 0.011

**Sensor 12**

**Sensor with most importance with Gini importance: 5, 1,3 and 7**

Test accuracy: 0.928

Test accuracy: 0.921

Test accuracy: 0.929

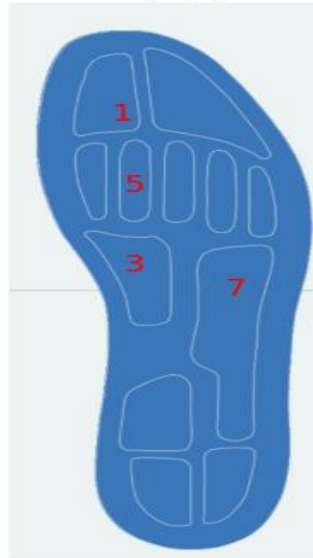
Test accuracy: 0.922

Test accuracy: 0.919

Mean accuracy: 0.924

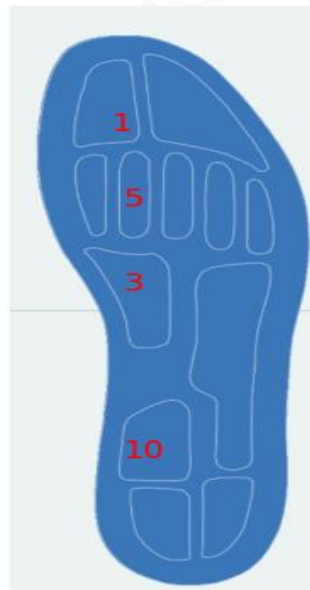
Standard deviation: 0.004

Sensor 5, 1,3,and 7



**Sensor with most importance with feature permutation importance: 3,1,5,10**

Sensor 3, 1,5,and 10



**Sensor with most importance with Gradient Boosting Machines: 7,3,2,1**

Sensor 7, 3,2,and 1



```
rocket = RocketClassifier(num_kernels=500)
```