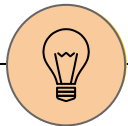


Thalmic Labs: Case Study

Charley Carriero

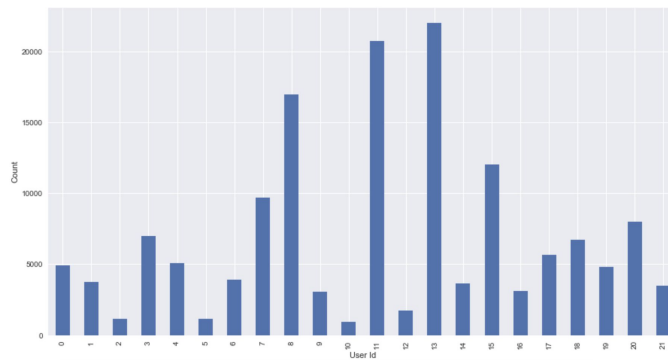




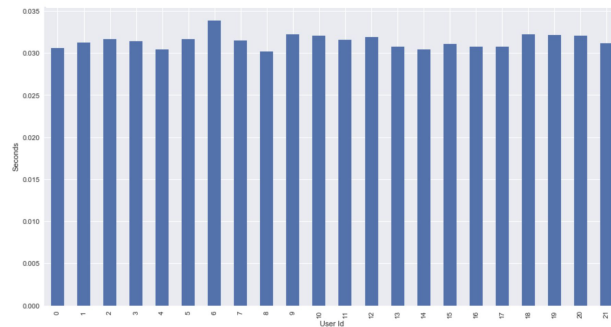
The Data.

- Elapsed time.
- X acceleration
- Y acceleration
- Z acceleration

Number of Observations



Average Time Between Observations





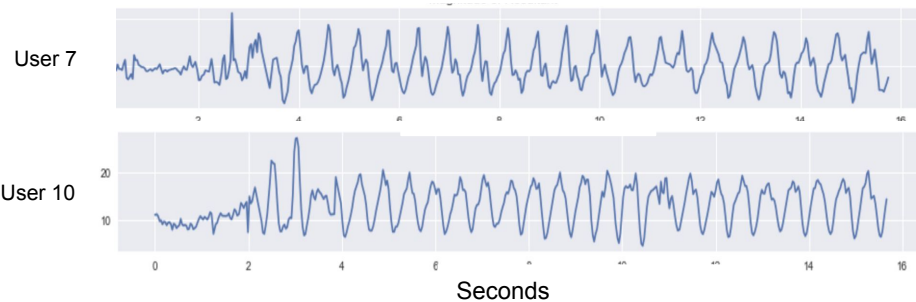
Features

Raw Accelerometer
Data

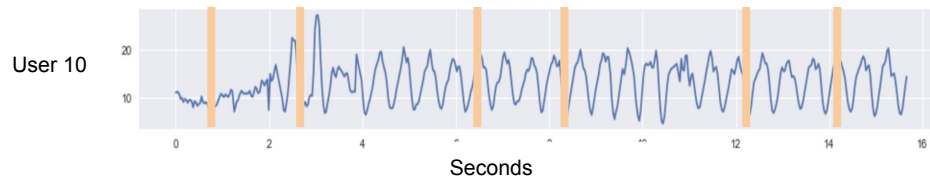


X	Y	Z	Resultant

Resultant Magnitude



Rolling Window





Model

- Mean
- Standard Deviation
- Minimum
- Maximum

x 4

16 Features

100 observations per window

50% window overlap

Shuffle Data

Train:Test 70:30

Random Forest

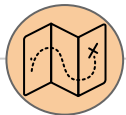
Train	Test
0.99	0.84

KNN

0.87	0.80
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Linear SVM

0.80	0.75
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Discussion

Model Improvement

- Rolling window optimization
- More features
- Hyperparameter optimization

Generalization

- Are they walking the same path?
- Demographics of user?

Biometric Identification

