## DATA

| Data name | Sensor type | Signal data length | Number of signals | Data repartition score ⓘ |
|-----------|-------------|--------------------|--------------------|--------------------------|
| circle | | | 822 | |
| horizontal | | | 716 | |
| standby | multiGeneric | 768 (128 * 6 axis) | 229 | Poor ★★☆☆☆ |
| triangle | | | 823 | |
| vertical | | | 708 | |

## PERFORMANCE

| Performance | Value |
|-------------|-------|
| Score ⓘ | 94.77 % |
| Balanced Accuracy ⓘ | 96.46 % |
| RAM ⓘ | 5.7 KB |
| Flash ⓘ | 18.8 KB |

| Classname | Recall ⓘ |
|-----------|----------|
| circle | 96.10 % |
| horizontal | 98.53 % |
| standby | 98.44 % |
| triangle | 93.96 % |

## CROSS VALIDATION

| Balanced accuracy of 10 cross-validation tests ⓘ | | | | |
|--------|---------|--------|--------|-------|
| Median | Average | Min | Max | STDEV |
| 96.35 % | 96.46 % | 95.18 % | 97.53 % | 0.90 |

| Performance | Value |
|---|---|
| Accuracy ⓘ | 96.07 % |
| F1-Score ⓘ | 96.10 % |
| ROC AUC Score ⓘ | 97.53 % |
| Precision ⓘ | 95.83 % |
| MCC ⓘ | 94.96 % |

| Classname | Recall ⓘ |
|---|---|
| vertical | 95.25 % |

ALGORITHM FLOWCHART

Input signal buffer →

Signal Processing

Rescaling data ⓘ → FFT ⓘ → Max Pooling by Blocks ⓘ

→ ML Model

SVM ⓘ

→ Inference result: probability of each class