Support Vector Machine (SVM)

Cara Kerja
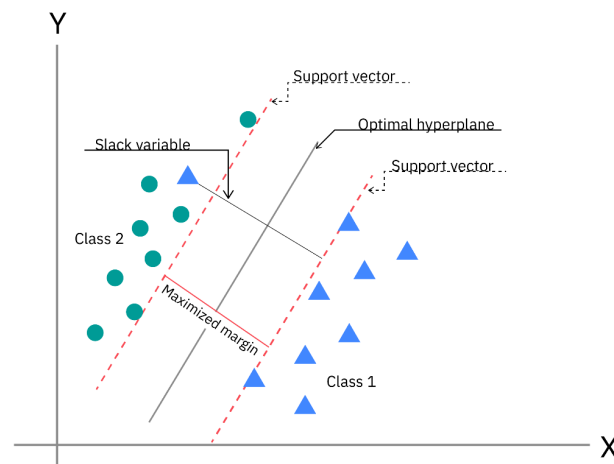
Evaluasi Model

Evaluasi	Hasil
Model from Scratch	

Hold-out validation untuk grip_lost	

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Testing SVM with LINEAR kernel
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Hold-Out Validation for grip_lost:
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Training time: 23.298032522201538 seconds
Prediction time: 0.0 seconds
              precision    recall  f1-score   support

           0       0.96      1.00      0.98      1414
           1       0.00      0.00      0.00        57

    accuracy                           0.96      1471
   macro avg       0.48      0.50      0.49      1471
weighted avg       0.92      0.96      0.94      1471
```
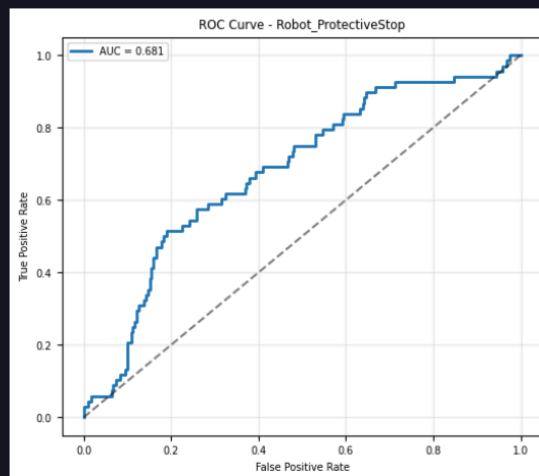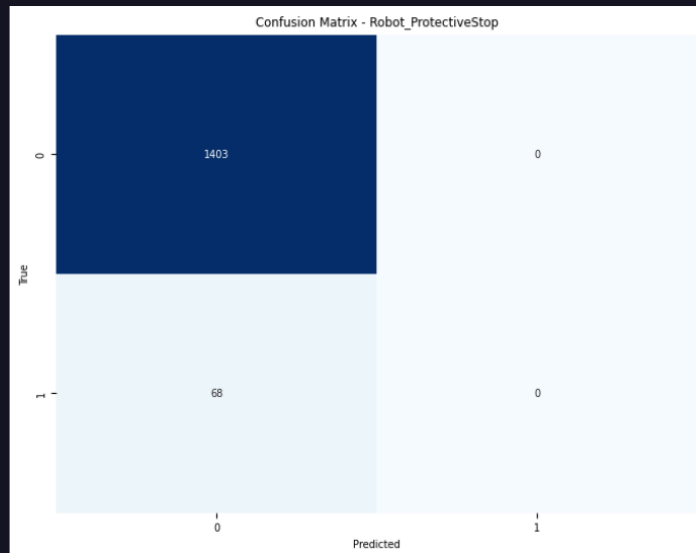
Confusion Matrix - grip_lost

ROC Curve - grip_lost
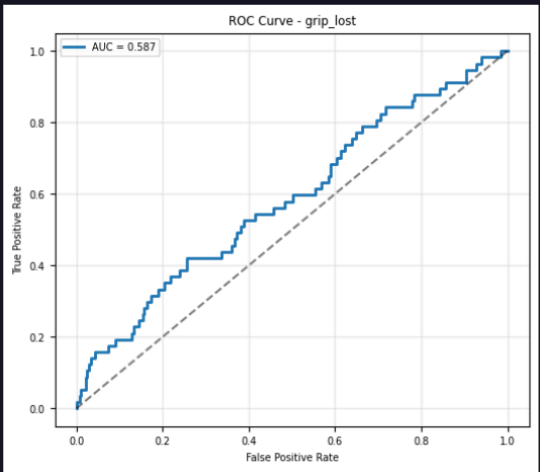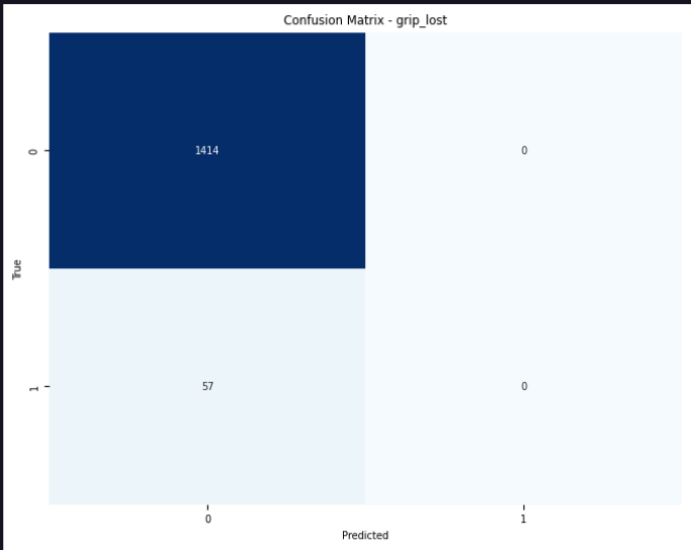
AUC-ROC: 0.5868

	Hold out validation untuk Robot_ProtectiveStop	

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Hold-Out Validation for Robot_ProtectiveStop:
=======================================================
Training time: 35.47815942764282 seconds
Prediction time: 0.0 seconds
              precision    recall  f1-score   support

           0       0.95      1.00      0.98      1403
           1       0.00      0.00      0.00        68

    accuracy                           0.95      1471
   macro avg       0.48      0.50      0.49      1471
weighted avg       0.91      0.95      0.93      1471
```

Confusion Matrix - Robot_ProtectiveStop

	Predicted 0	Predicted 1
True 0	1403	0
True 1	68	0

ROC Curve - Robot_ProtectiveStop

AUC = 0.681

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AUC-ROC: 0.6809
```

| K-fold cross validation untuk grip_lost	 ``` === Cross Validation for grip_lost: === Model Performance (5-Fold Cross Validation): fit_time: [38.06301212 29.91965699 34.29635072 47.59330678 36.29580259] score_time: [0.0065484 0.00653934 0.01010847 0.0075078 0.02003241] test_precision: [0. 0. 0. 0. 0.] Average test_precision: 0.00 test_recall: [0. 0. 0. 0. 0.] Average test_recall: 0.00 test_f1: [0. 0. 0. 0. 0.] Average test_f1: 0.00 ```
K-fold cross validation untuk Robot_ProtectiveStop	 ``` === Cross Validation for Robot_ProtectiveStop: === Model Performance (5-Fold Cross Validation): fit_time: [31.96709681 27.7054584 22.35300517 21.23884964 21.31875515] score_time: [0.00400519 0.00503778 0.00400281 0.00351191 0.00401711] test_precision: [0. 0. 0. 0. 0.] Average test_precision: 0.00 test_recall: [0. 0. 0. 0. 0.] Average test_recall: 0.00 test_f1: [0. 0. 0. 0. 0.] Average test_f1: 0.00 ```
Model Scikit-Learn	

| Hold-out validation untuk grip_lost |

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Testing SVM with LINEAR kernel
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Hold-Out Validation for grip_lost:
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Training time: 1.1507034301757812 seconds
Prediction time: 0.02562880516052246 seconds
              precision    recall  f1-score   support

           0       0.96      1.00      0.98      1414
           1       0.00      0.00      0.00        57

    accuracy                           0.96      1471
   macro avg       0.48      0.50      0.49      1471
weighted avg       0.92      0.96      0.94      1471
```
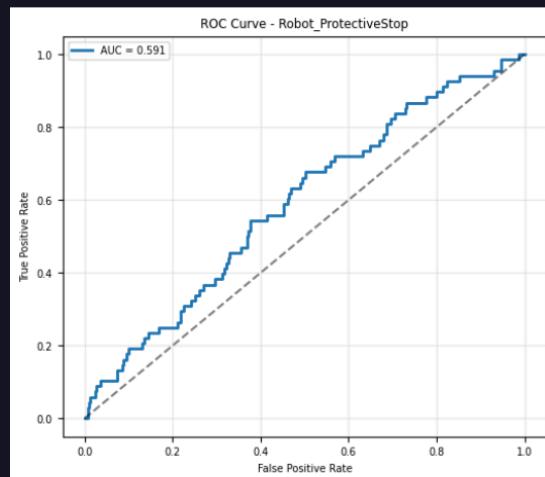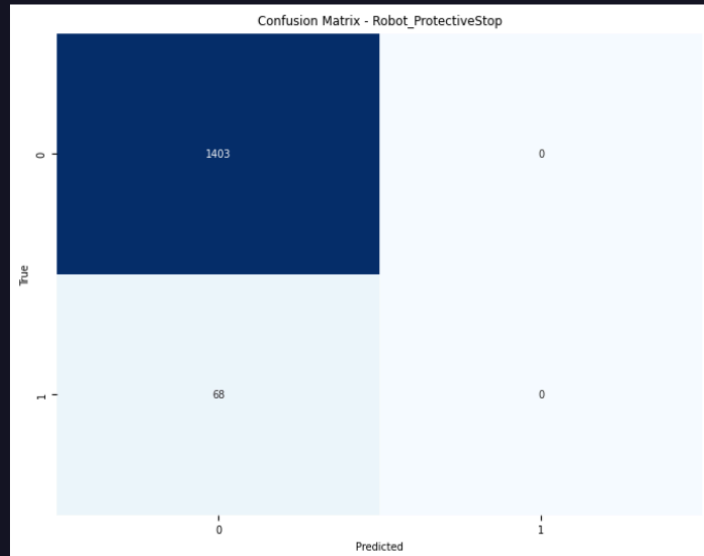

Confusion Matrix - grip_lost

ROC Curve - grip_lost
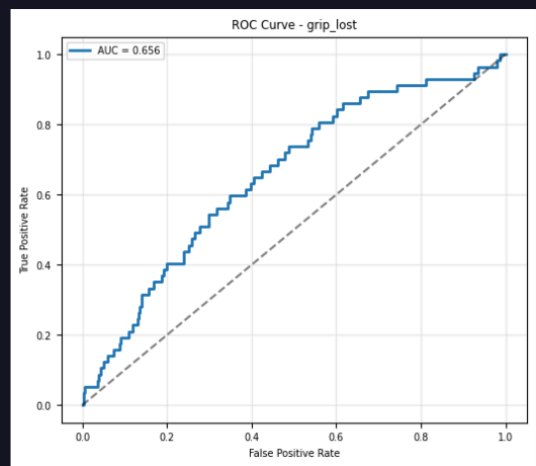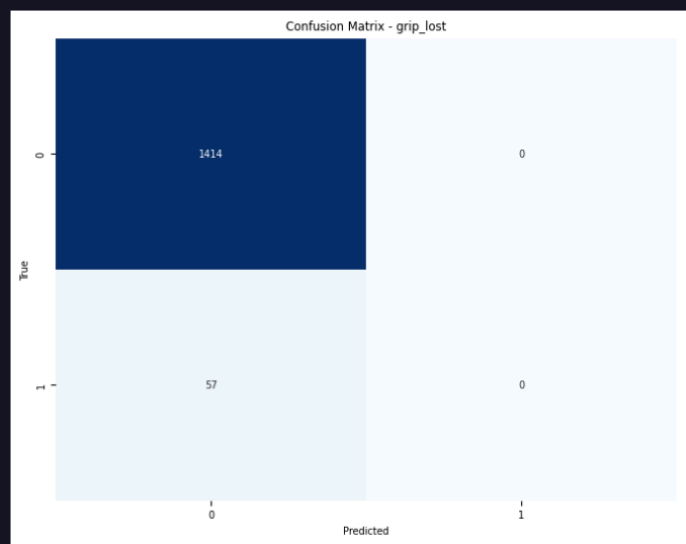
```
AUC-ROC: 0.6559
```

	Hold out validation untuk Robot_ProtectiveStop

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Hold-Out Validation for Robot_ProtectiveStop:
=========================================================
Training time: 0.5914256572723389 seconds
Prediction time: 0.018274307250976562 seconds
              precision    recall  f1-score   support

           0       0.95      1.00      0.98      1403
           1       0.00      0.00      0.00        68

    accuracy                           0.95      1471
   macro avg       0.48      0.50      0.49      1471
weighted avg       0.91      0.95      0.93      1471
```

Confusion Matrix - Robot_ProtectiveStop

ROC Curve - Robot_ProtectiveStop


```
AUC-ROC: 0.5905
```

| K-fold cross validation untuk grip_lost | ```
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Cross Validation for grip_lost:
============================================================
Model Performance (5-Fold Cross Validation):

fit_time: [0.61604238 0.87406826 0.99513531 0.93005371 1.14312315]

score_time: [0.01884604 0.02561831 0.02104497 0.02630615 0.02857304]

test_precision: [0. 0. 0. 0. 0.]
Average test_precision: 0.00

test_recall: [0. 0. 0. 0. 0.]
Average test_recall: 0.00

test_f1: [0. 0. 0. 0. 0.]
Average test_f1: 0.00
``` |
| K-fold cross validation untuk Robot_ProtectiveStop | ```
============================================================
Cross Validation for Robot_ProtectiveStop:
============================================================
Model Performance (5-Fold Cross Validation):

fit_time: [0.91390324 1.0460732  1.05590796 1.18937159 0.98239303]

score_time: [0.03044343 0.03454709 0.03554249 0.03207207 0.03408766]

test_precision: [0. 0. 0. 0. 0.]
Average test_precision: 0.00

test_recall: [0. 0. 0. 0. 0.]
Average test_recall: 0.00

test_f1: [0. 0. 0. 0. 0.]
Average test_f1: 0.00
``` |

Improvement