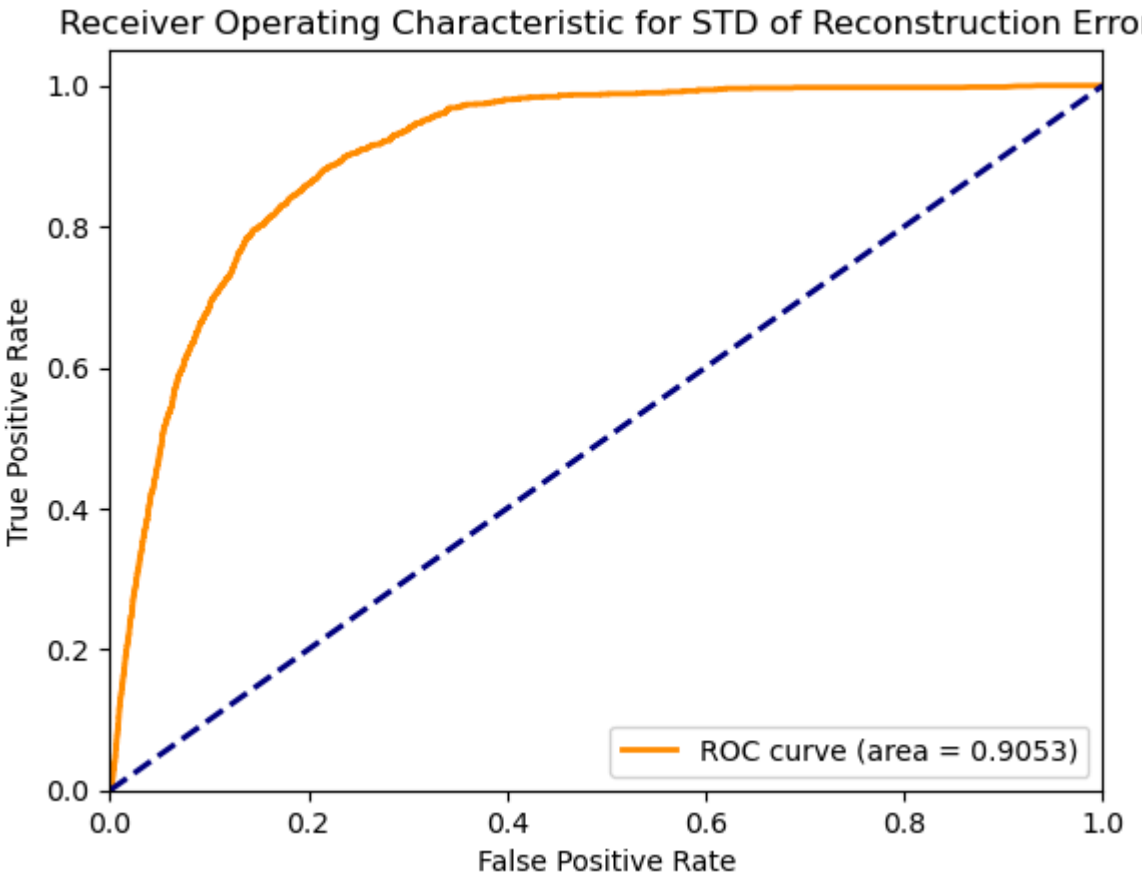
```
Modality 1 - Thermal
Non Falls - 48, Falls - 173

Modality 2 - IP
Non Falls - 48, Falls - 173

Train Dataloader - 48
Test Dataloader - 173

Device Used - cuda

Model Used - MultiModal_3DCAE
Key Frame Extraction - False
Feature Extraction - True
Background Subtraction - True
Background Subtraction Algorithm - GMG
Data Augmentation - False
Spatial Temporal Loss - False

Frame rate adjusted dataset - True
Synchronise Video - True
Video length adjustment method - Not Applicable

Window Length = 8
Stride = 1
Fair Comparison = True
Dropout = 0.25
Learning Rate = 0.0002
Num Epochs = 20
Chunk Size = 64
Forward Chunk Size = 8
Loss Fn = L1Loss()

Training has Begun
epoch [1/20], loss:0.0010
epoch [2/20], loss:0.0005
epoch [3/20], loss:0.0003
epoch [4/20], loss:0.0003
epoch [5/20], loss:0.0002
epoch [6/20], loss:0.0002
epoch [7/20], loss:0.0002
epoch [8/20], loss:0.0002
epoch [9/20], loss:0.0002
epoch [10/20], loss:0.0001
epoch [11/20], loss:0.0001
epoch [12/20], loss:0.0001
epoch [13/20], loss:0.0001
epoch [14/20], loss:0.0001
epoch [15/20], loss:0.0001
epoch [16/20], loss:0.0001
epoch [17/20], loss:0.0001
epoch [18/20], loss:0.0001
epoch [19/20], loss:0.0001
epoch [20/20], loss:0.0001
Training has Completed

Forward pass occuring
Forward pass completed
```

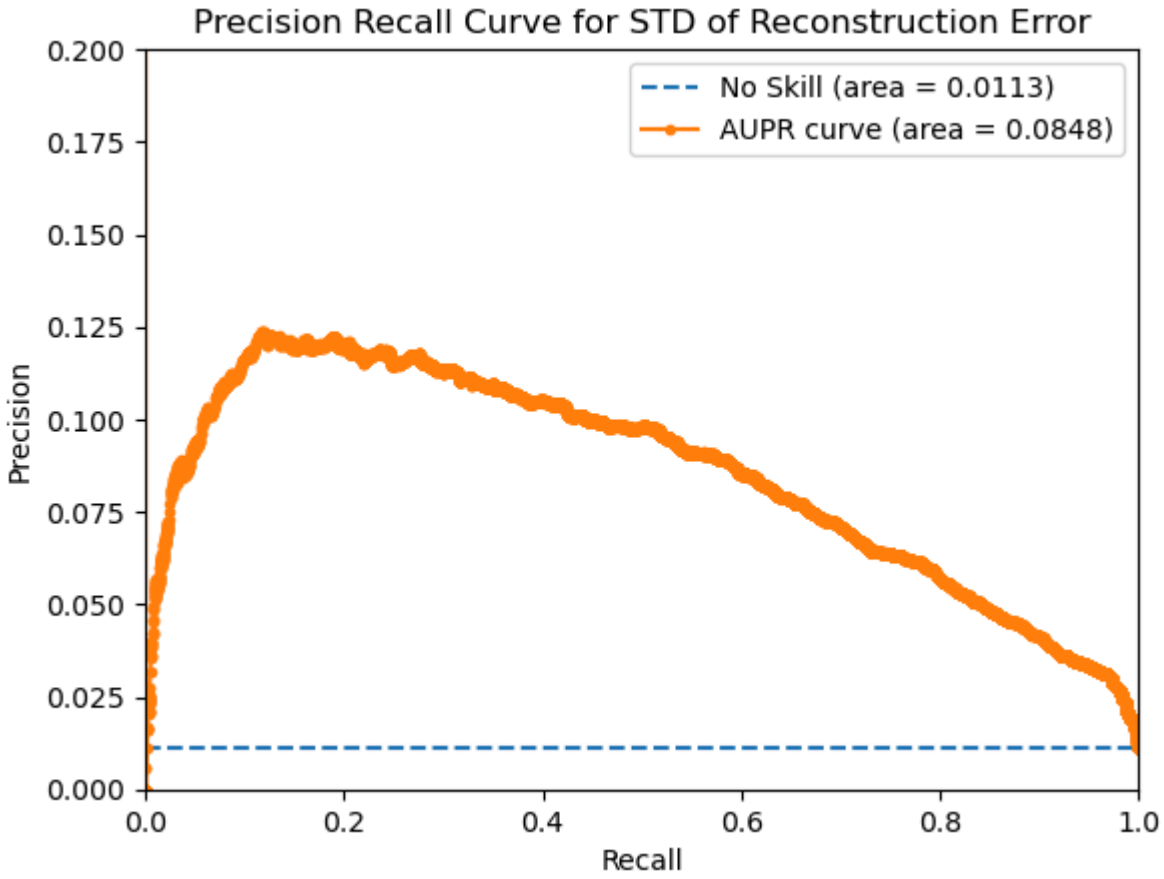
```
MultiModal_Thermal_T3_IP_T_2024-04-18-02-36-27

---------------------------------
STD Global Classification Results
TPR 0.881, FPR 0.215, Precision 0.045, Recall 0.881
tn 100054, fp 27473, fn 174, tp 1284
std_AUROC  0.905
---------------------------------
---------------------------------
Mean Global Classification Results
TPR 0.819, FPR 0.120, Precision 0.072, Recall 0.819
tn 112164, fp 15363, fn 264, tp 1194
mean_AUROC 0.925
---------------------------------
d:\Abdul Rasheed NITT\Academics\Eigth Semester\FYP\Implementation\FallDetection\Code\funct
ions.py:250: RuntimeWarning: Mean of empty slice
  final_performance_mean = np.nanmean(video_metrics, axis=0)  # get the mean performance a
cross all videos
c:\Users\abdul\anaconda3\envs\fyp_base_paper_2\lib\site-packages\numpy\lib\nanfunctions.p
y:1670: RuntimeWarning: Degrees of freedom <= 0 for slice.
  var = nanvar(a, axis=axis, dtype=dtype, out=out, ddof=ddof,
---------------------------------
STD Global Classification Results
TPR 0.866, FPR 0.186, Precision 0.050, Recall 0.866
tn 103780, fp 23757, fn 194, tp 1254
std_AUROC  0.905
---------------------------------
---------------------------------
Mean Global Classification Results
TPR 0.873, FPR 0.201, Precision 0.047, Recall 0.873
tn 101950, fp 25587, fn 184, tp 1264
mean_AUROC 0.899
---------------------------------
c:\Users\abdul\anaconda3\envs\fyp_base_paper_2\lib\site-packages\sklearn\metrics\_ranking.
py:1132: UndefinedMetricWarning: No positive samples in y_true, true positive value should
be meaningless
  warnings.warn(
c:\Users\abdul\anaconda3\envs\fyp_base_paper_2\lib\site-packages\sklearn\metrics\_ranking.
py:979: UserWarning: No positive class found in y_true, recall is set to one for all thres
holds.
  warnings.warn(
c:\Users\abdul\anaconda3\envs\fyp_base_paper_2\lib\site-packages\sklearn\metrics\_ranking.
py:1132: UndefinedMetricWarning: No positive samples in y_true, true positive value should
be meaningless
  warnings.warn(
c:\Users\abdul\anaconda3\envs\fyp_base_paper_2\lib\site-packages\sklearn\metrics\_ranking.
py:979: UserWarning: No positive class found in y_true, recall is set to one for all thres
holds.
  warnings.warn(
d:\Abdul Rasheed NITT\Academics\Eigth Semester\FYP\Implementation\FallDetection\Code\funct
ions.py:250: RuntimeWarning: Mean of empty slice
  final_performance_mean = np.nanmean(video_metrics, axis=0)  # get the mean performance a
cross all videos
c:\Users\abdul\anaconda3\envs\fyp_base_paper_2\lib\site-packages\numpy\lib\nanfunctions.p
y:1670: RuntimeWarning: Degrees of freedom <= 0 for slice.
  var = nanvar(a, axis=axis, dtype=dtype, out=out, ddof=ddof,
```

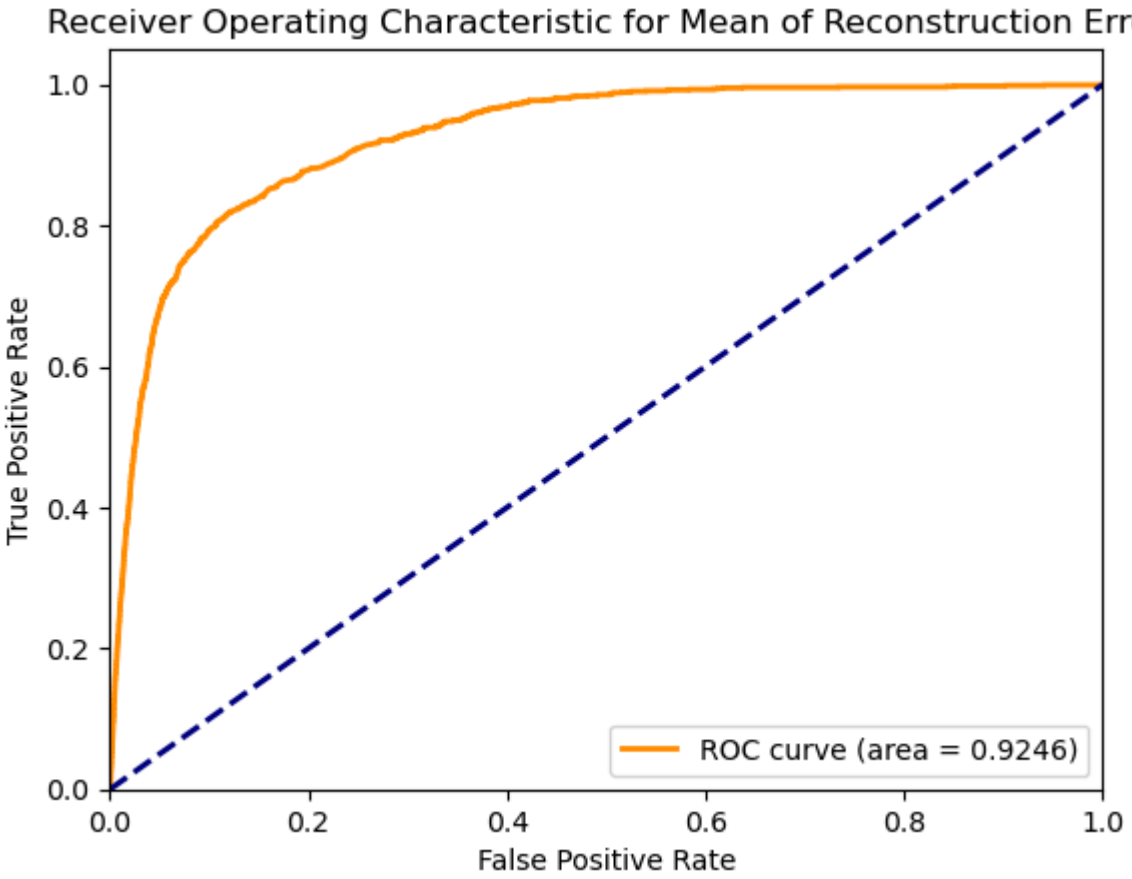
```
---------------------------------
STD Global Classification Results
TPR 0.866, FPR 0.168, Precision 0.056, Recall 0.866
tn 106102, fp 21425, fn 196, tp 1262
std_AUROC  0.920
---------------------------------
---------------------------------
Mean Global Classification Results
TPR 0.869, FPR 0.184, Precision 0.051, Recall 0.869
tn 104093, fp 23434, fn 191, tp 1267
mean_AUROC 0.913
---------------------------------
```

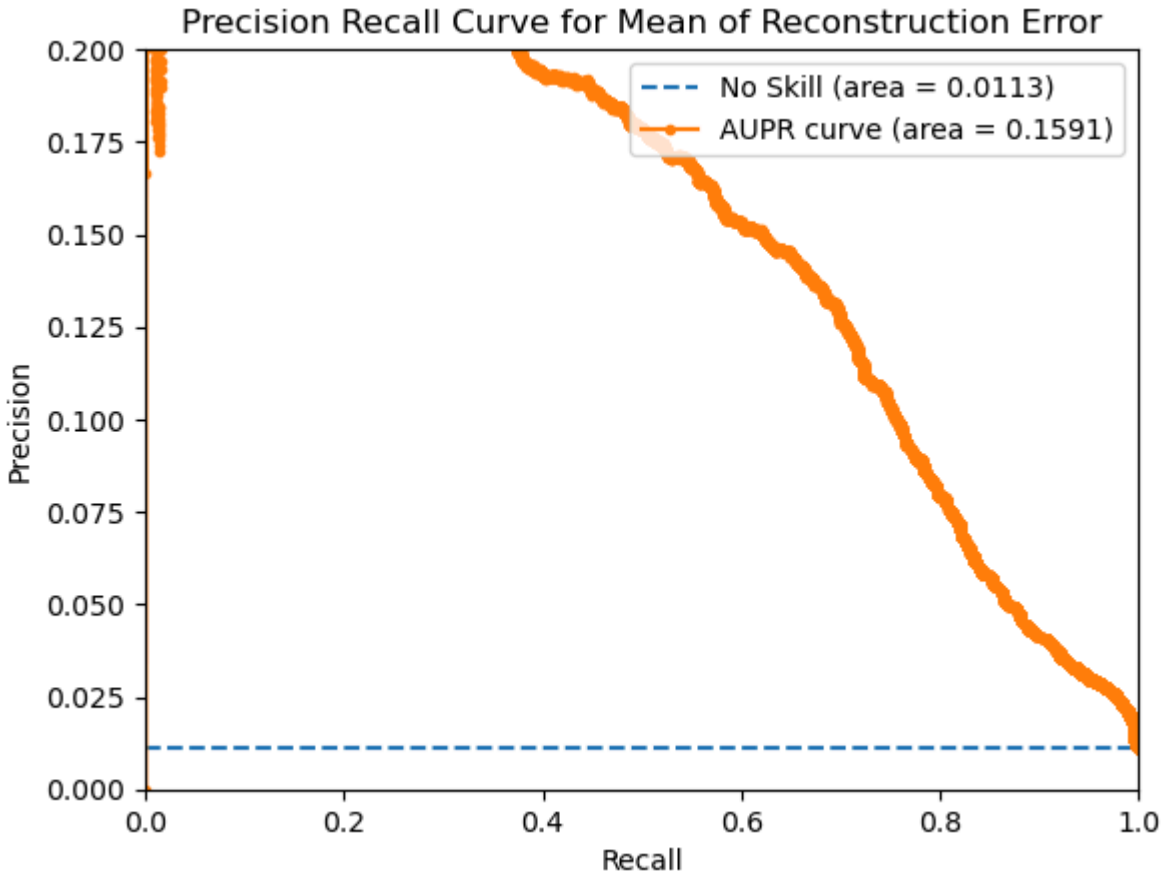
```
d:\Abdul Rasheed NITT\Academics\Eigth Semester\FYP\Implementation\FallDetection\Code\funct
ions.py:250: RuntimeWarning: Mean of empty slice
  final_performance_mean = np.nanmean(video_metrics, axis=0)  # get the mean performance a
cross all videos
c:\Users\abdul\anaconda3\envs\fyp_base_paper_2\lib\site-packages\numpy\lib\nanfunctions.p
y:1670: RuntimeWarning: Degrees of freedom <= 0 for slice.
  var = nanvar(a, axis=axis, dtype=dtype, out=out, ddof=ddof,
```

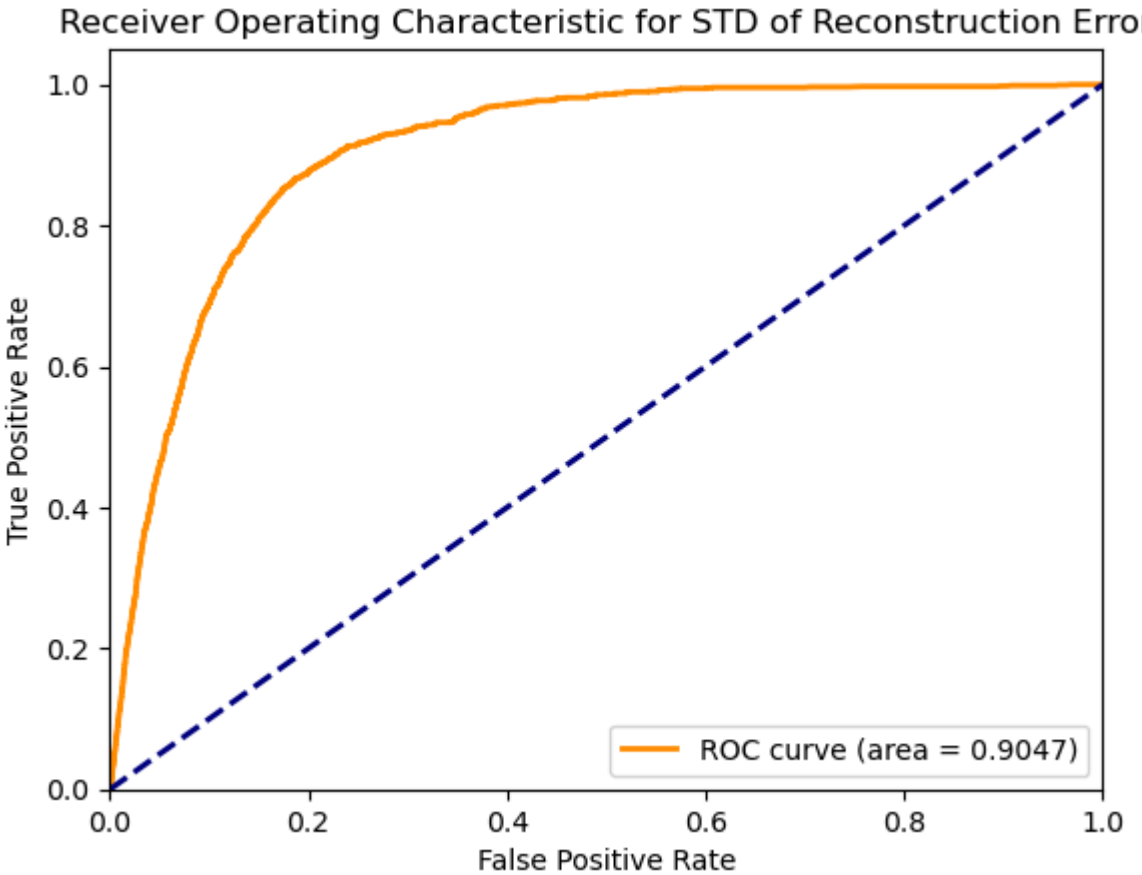
()

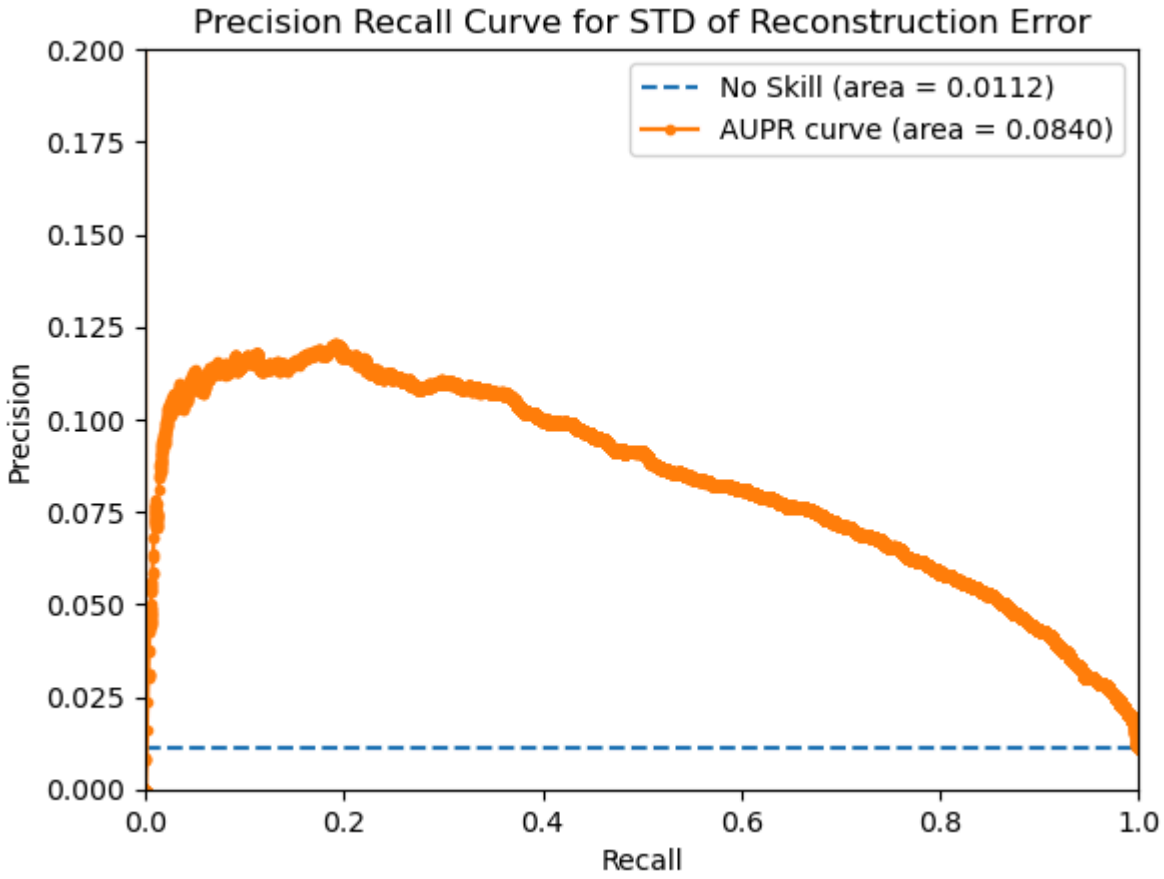


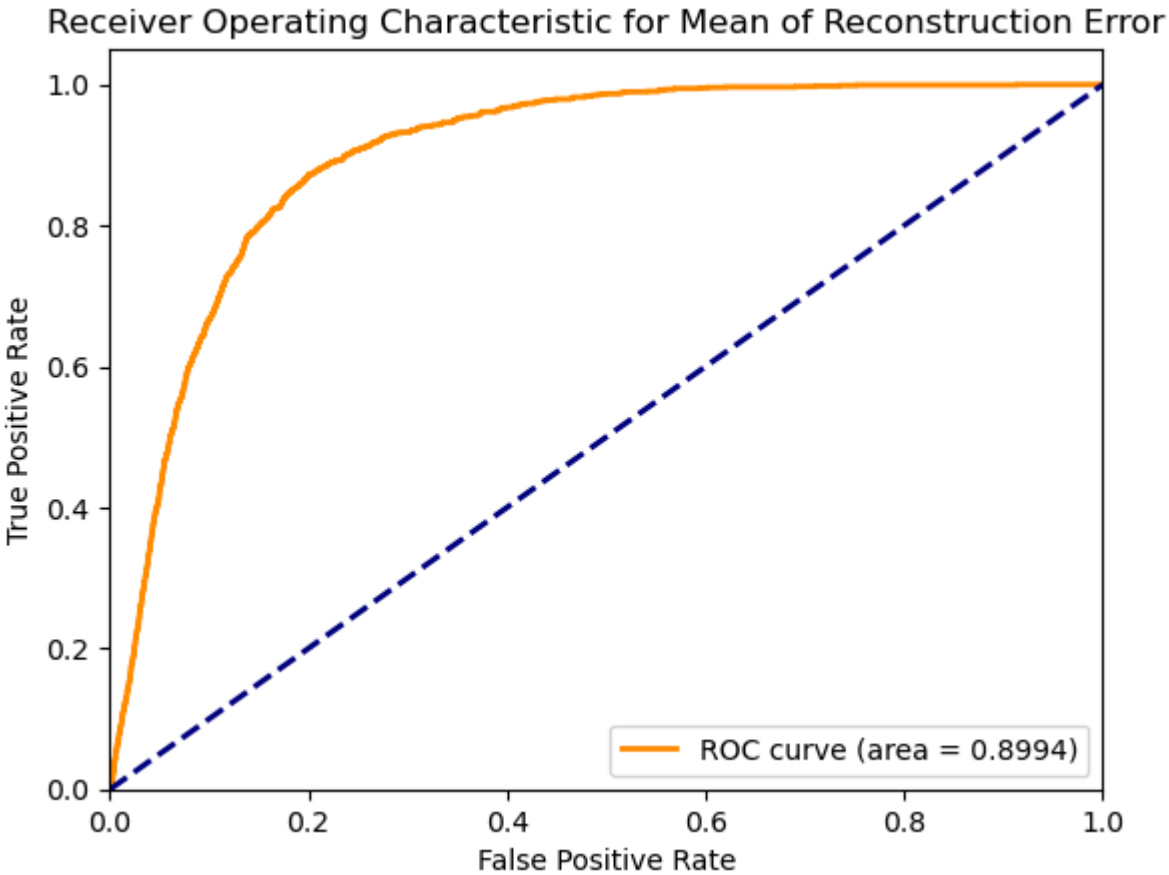

Precision Recall Curve for STD of Reconstruction Error
No Skill (area = 0.0113)
AUPR curve (area = 0.0848)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0

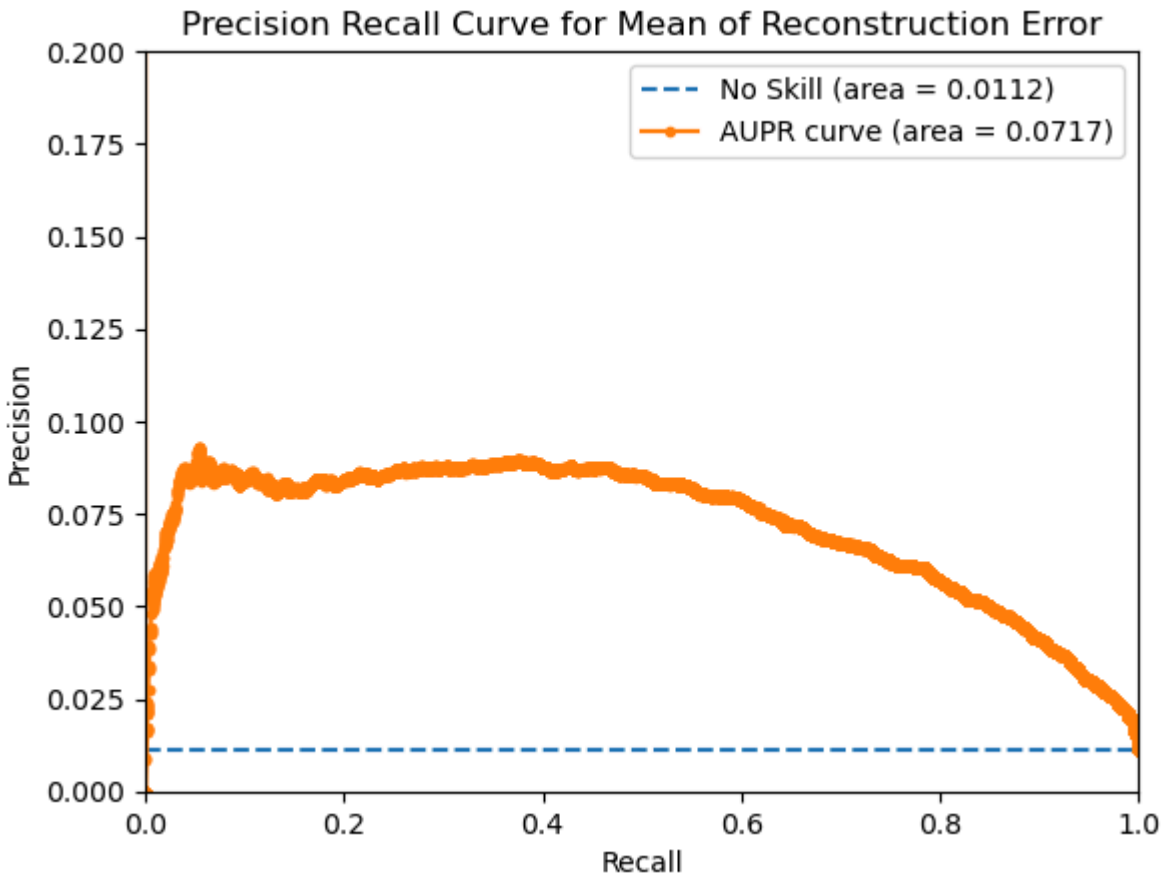

Receiver Operating Characteristic for Mean of Reconstruction Error
ROC curve (area = 0.9246)
True Positive Rate
False Positive Rate
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0

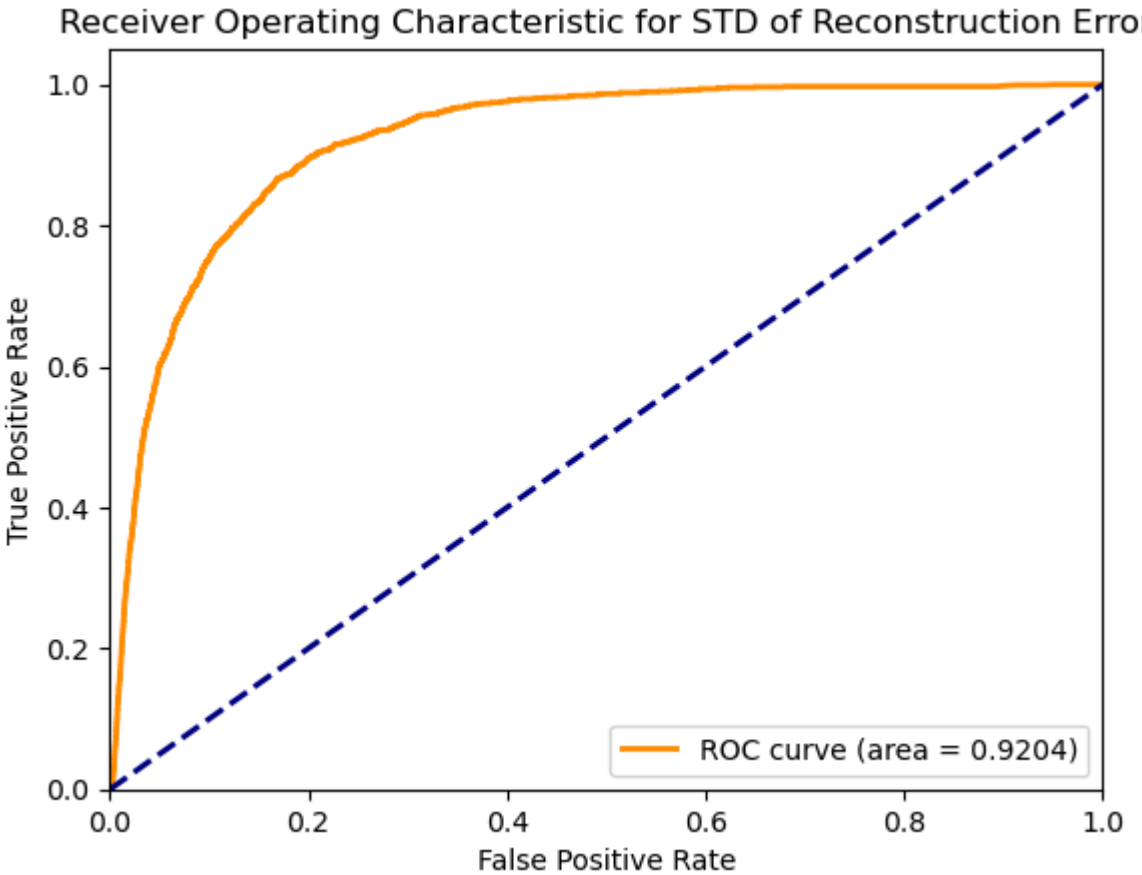

Precision Recall Curve for Mean of Reconstruction Error
No Skill (area = 0.0113)
AUPR curve (area = 0.1591)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0

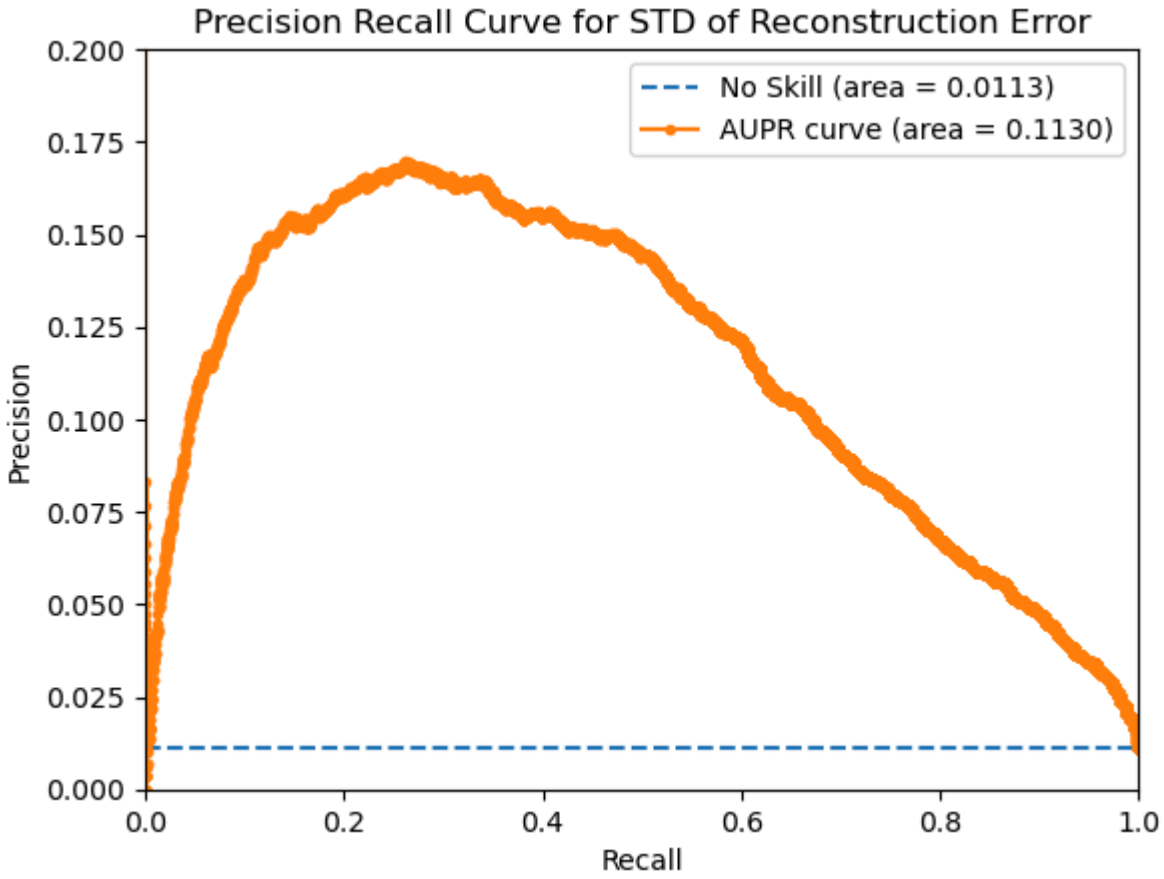

Receiver Operating Characteristic for STD of Reconstruction Error
ROC curve (area = 0.9047)
True Positive Rate
False Positive Rate
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0

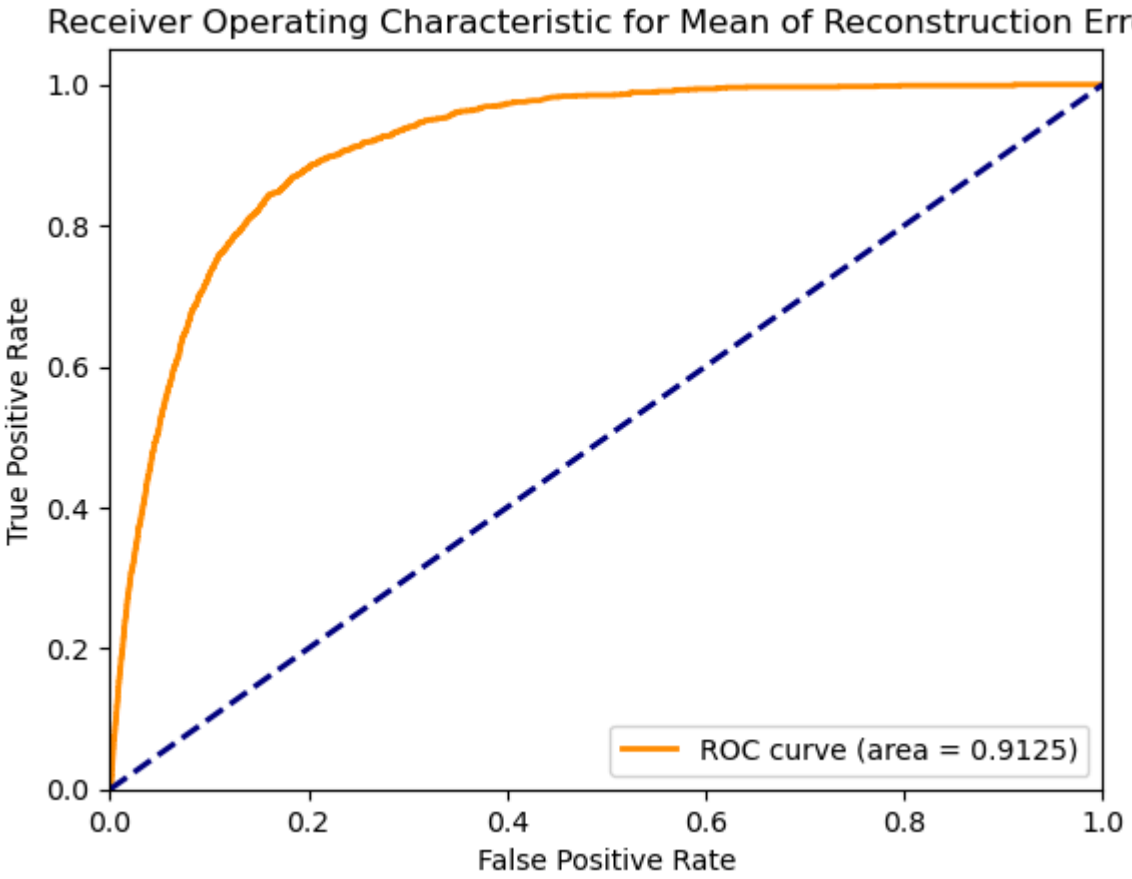

Precision Recall Curve for STD of Reconstruction Error
No Skill (area = 0.0112)
AUPR curve (area = 0.0840)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0

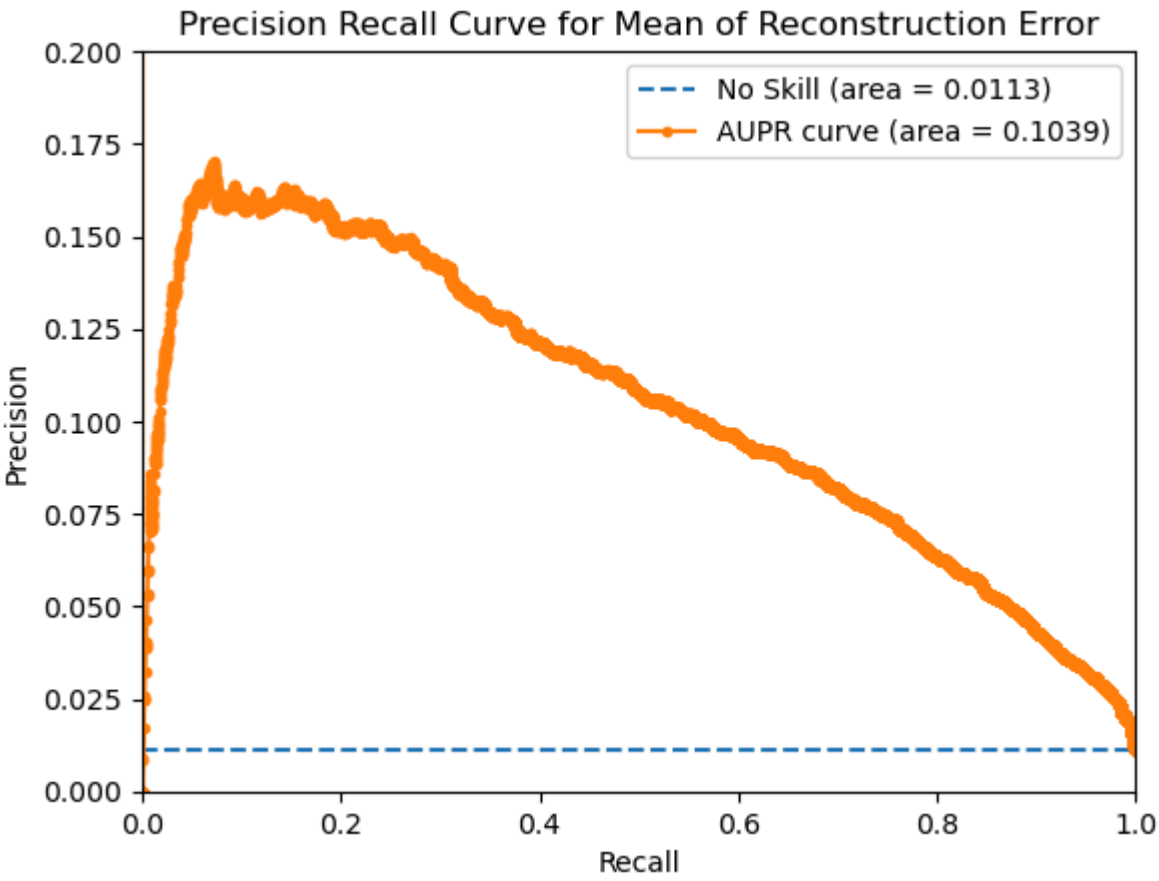

Receiver Operating Characteristic for Mean of Reconstruction Error
ROC curve (area = 0.8994)
True Positive Rate
False Positive Rate
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0


Precision Recall Curve for Mean of Reconstruction Error
No Skill (area = 0.0112)
AUPR curve (area = 0.0717)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0


Receiver Operating Characteristic for STD of Reconstruction Error
ROC curve (area = 0.9204)
True Positive Rate
False Positive Rate
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0


Precision Recall Curve for STD of Reconstruction Error
No Skill (area = 0.0113)
AUPR curve (area = 0.1130)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0


Receiver Operating Characteristic for Mean of Reconstruction Error
ROC curve (area = 0.9125)
True Positive Rate
False Positive Rate
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0


Precision Recall Curve for Mean of Reconstruction Error
No Skill (area = 0.0113)
AUPR curve (area = 0.1039)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0