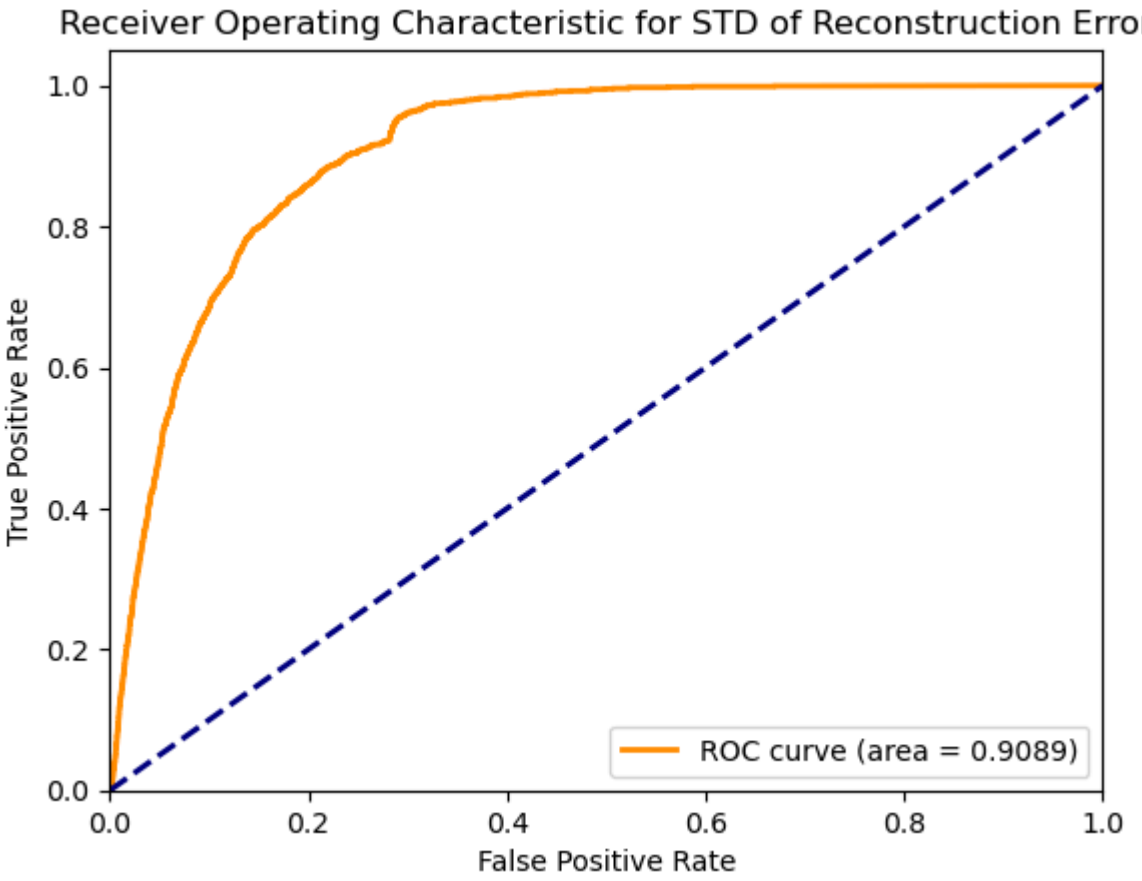
```
Modality 1 - Thermal
Non Falls - 48, Falls - 173

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 - True
w1 - 1, w2 - 1e-05

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 = SmoothL1Loss()

Training has Begun
epoch [1/20], loss:0.0133
epoch [2/20], loss:0.0050
epoch [3/20], loss:0.0018
epoch [4/20], loss:0.0003
epoch [5/20], loss:0.0006
epoch [6/20], loss:0.0004
epoch [7/20], loss:0.0003
epoch [8/20], loss:0.0001
epoch [9/20], loss:0.0001
epoch [10/20], loss:0.0001
epoch [11/20], loss:0.0000
epoch [12/20], loss:0.0000
epoch [13/20], loss:0.0000
epoch [14/20], loss:0.0001
epoch [15/20], loss:0.0000
epoch [16/20], loss:0.0000
epoch [17/20], loss:0.0000
epoch [18/20], loss:0.0001
epoch [19/20], loss:0.0000
epoch [20/20], loss:0.0000
Training has Completed

Forward pass occuring
Forward pass completed
```

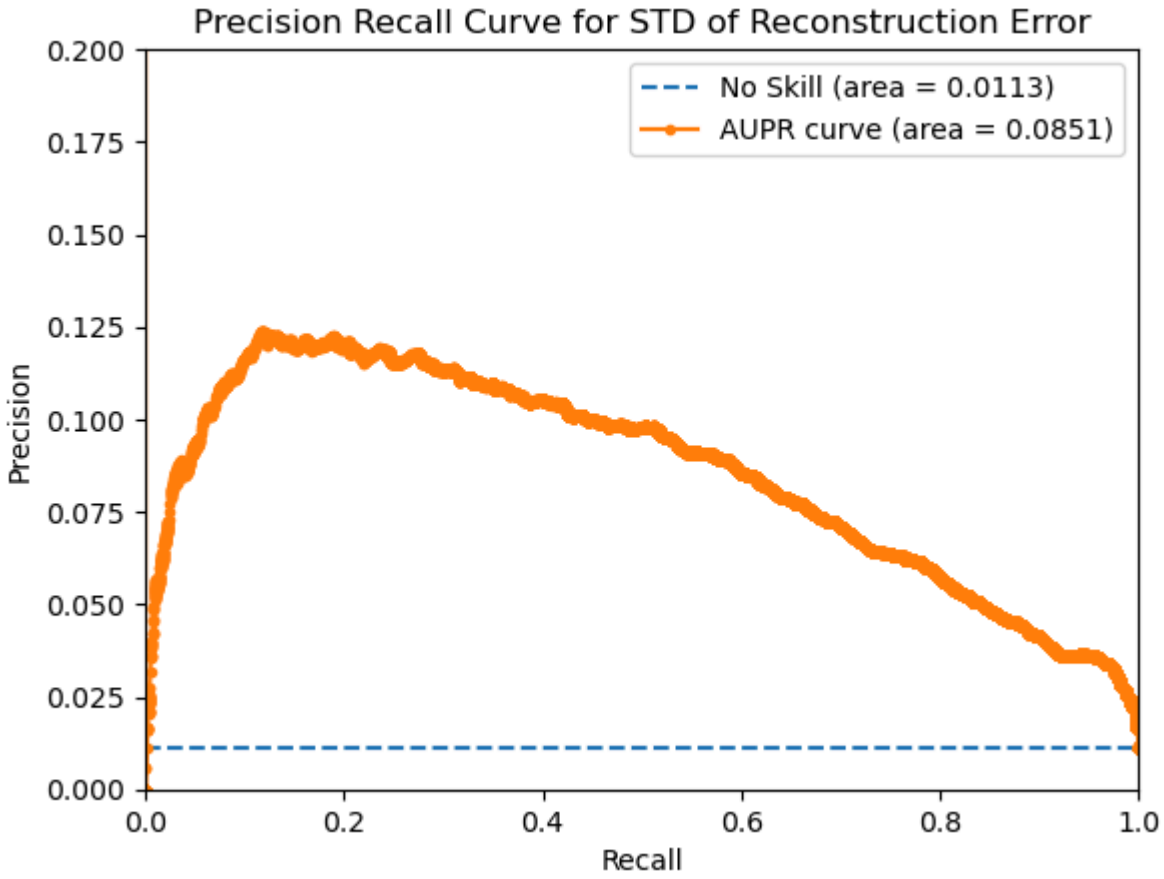
```
MultiModal_Thermal_T3_IP_T_2024-04-18-03-37-27

---------------------------------
STD Global Classification Results
TPR 0.879, FPR 0.213, Precision 0.045, Recall 0.879
tn 100373, fp 27154, fn 177, tp 1281
std_AUROC  0.909
---------------------------------
---------------------------------
Mean Global Classification Results
TPR 0.876, FPR 0.194, Precision 0.049, Recall 0.876
tn 102774, fp 24753, fn 181, tp 1277
mean_AUROC 0.917
---------------------------------
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 0.865, FPR 0.186, Precision 0.050, Recall 0.865
tn 103799, fp 23738, fn 195, tp 1253
std_AUROC  0.903
---------------------------------
---------------------------------
Mean Global Classification Results
TPR 0.914, FPR 0.300, Precision 0.033, Recall 0.914
tn 89265, fp 38272, fn 124, tp 1324
mean_AUROC 0.872
---------------------------------
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,
```

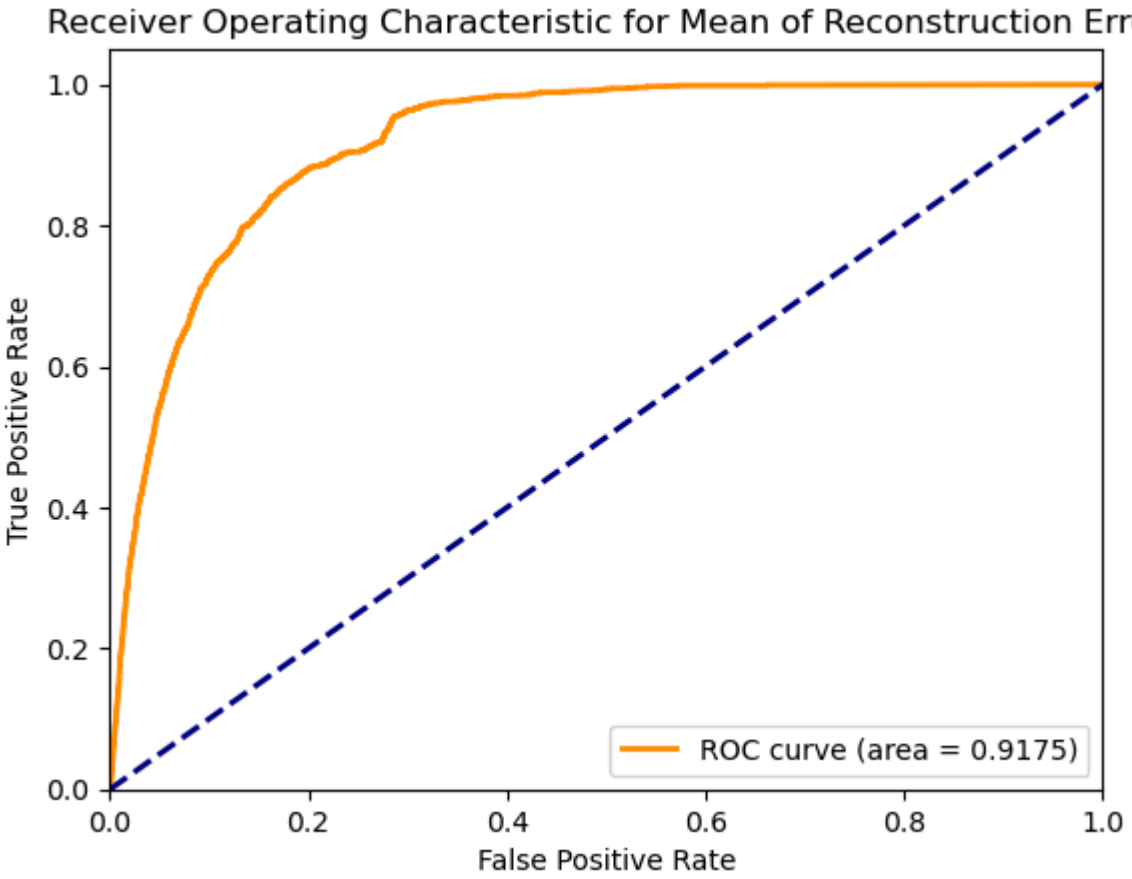
```
---------------------------------
STD Global Classification Results
TPR 0.866, FPR 0.168, Precision 0.056, Recall 0.866
tn 106113, fp 21414, fn 196, tp 1262
std_AUROC  0.921
---------------------------------
---------------------------------
Mean Global Classification Results
TPR 0.881, FPR 0.192, Precision 0.050, Recall 0.881
tn 103098, fp 24429, fn 173, tp 1285
mean_AUROC 0.917
---------------------------------
```

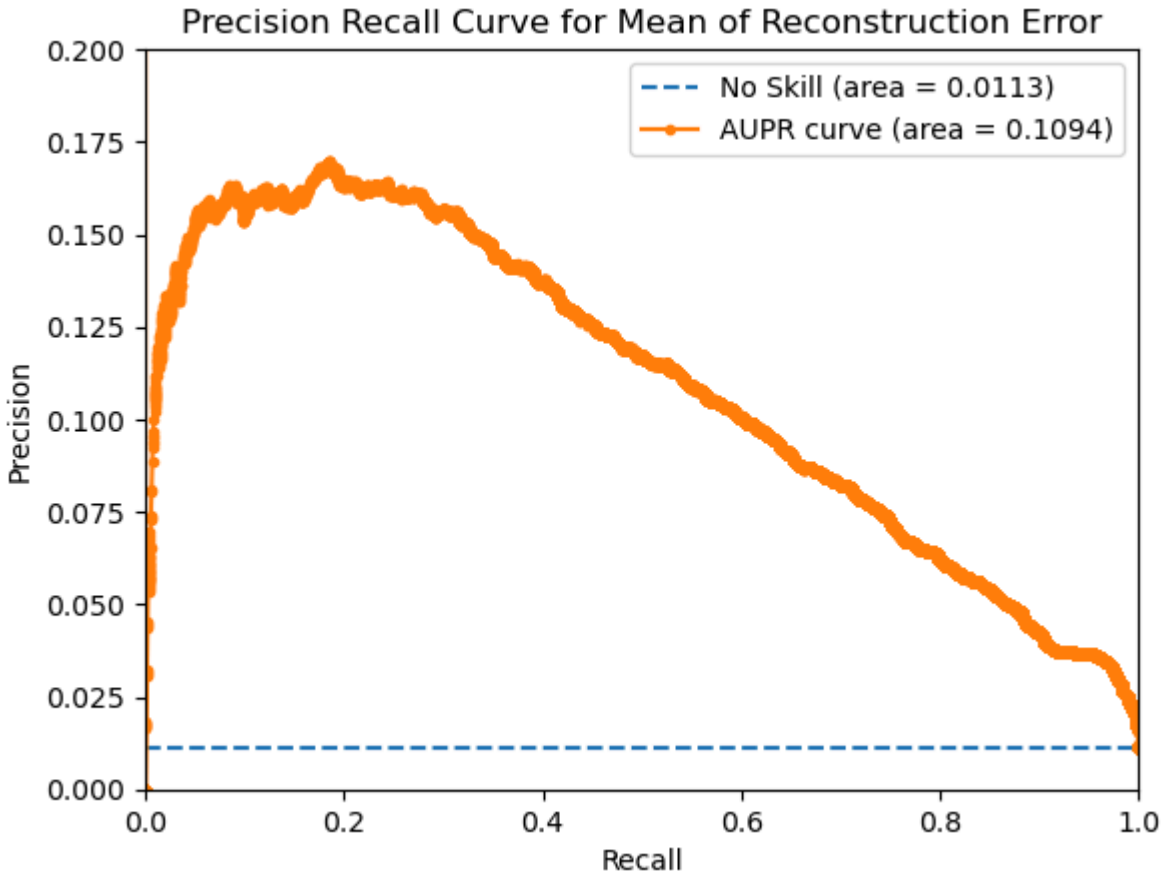
```
d:\Abdul Rasheed NITT\Academics\Eigth Semester\FYP\Implementation\FallDetection\Code\funct
ions.py:250: RuntimeWarning: Mean of empty slice
  final_performance_mean = np.nanmean(video_metrics, axis=0)  # get the mean performance a
cross all videos
c:\Users\abdul\anaconda3\envs\fyp_base_paper_2\lib\site-packages\numpy\lib\nanfunctions.p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

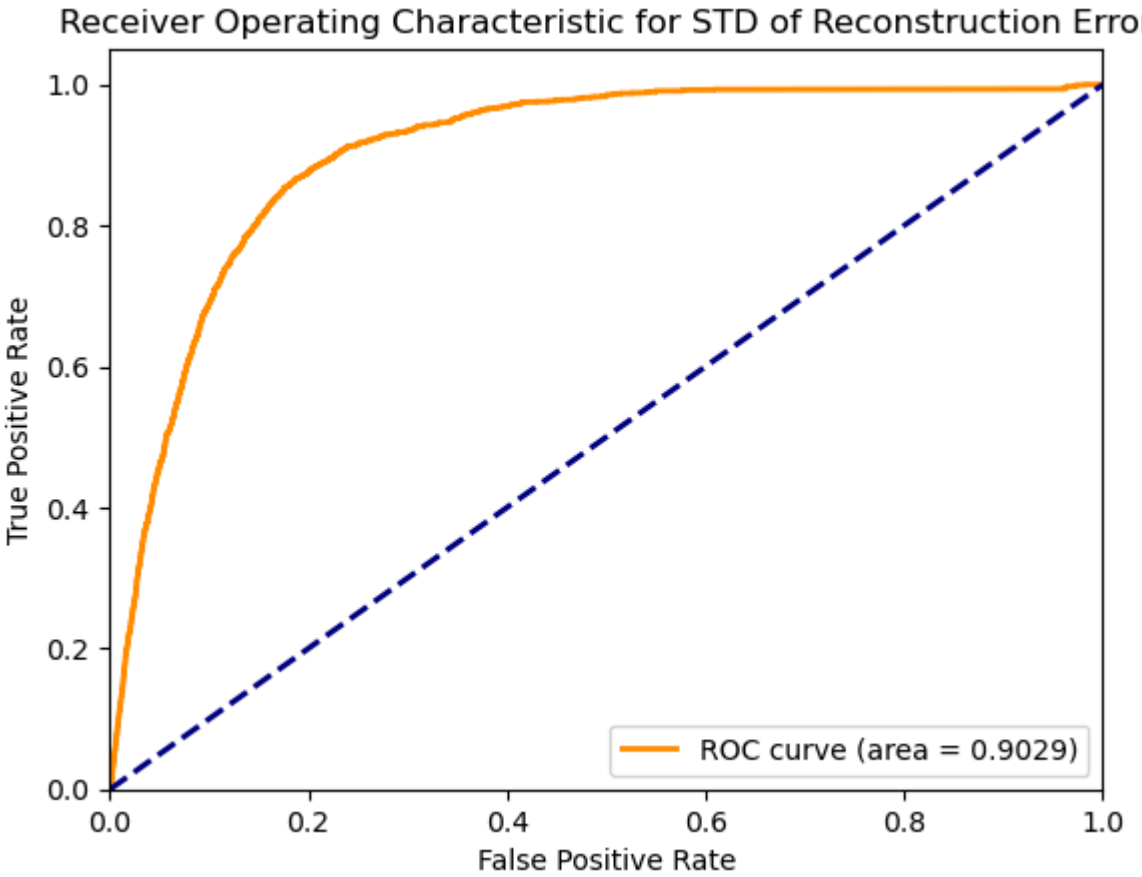
()

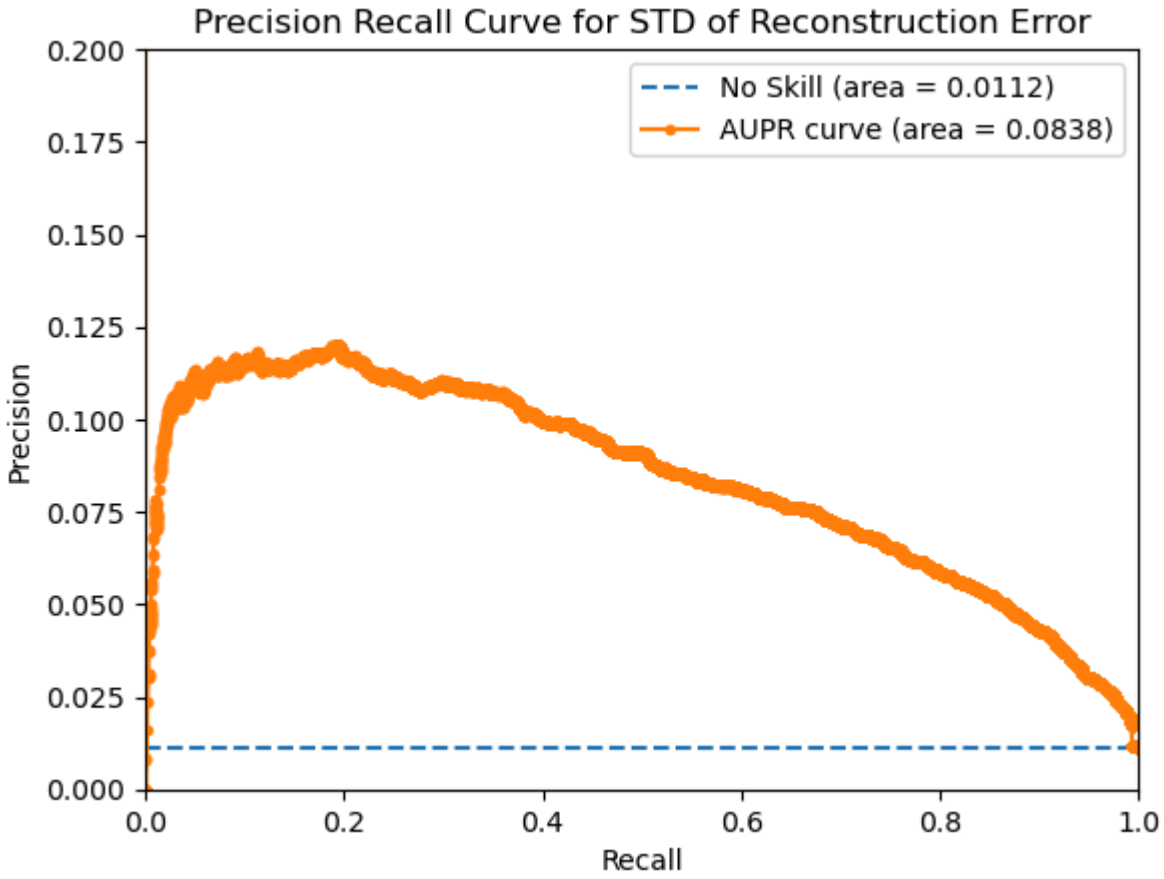


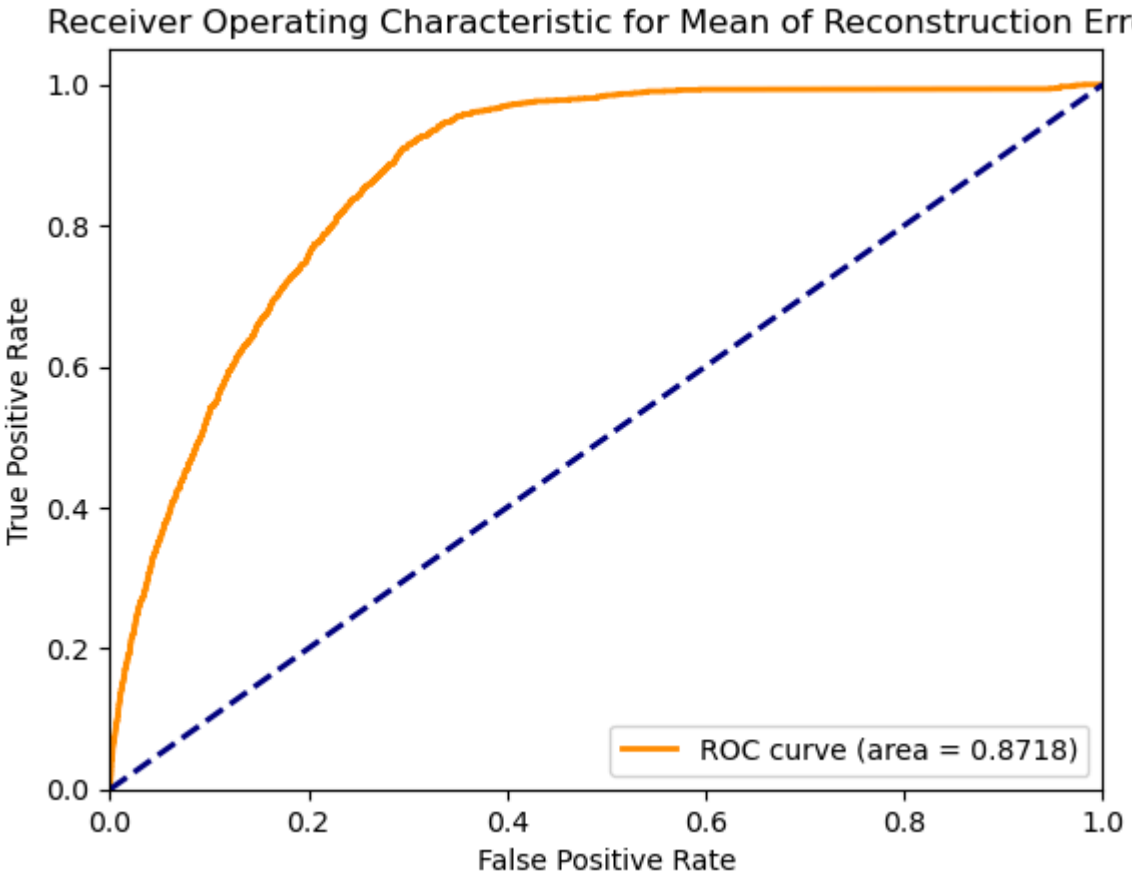

Precision Recall Curve for STD of Reconstruction Error
No Skill (area = 0.0113)
AUPR curve (area = 0.0851)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0

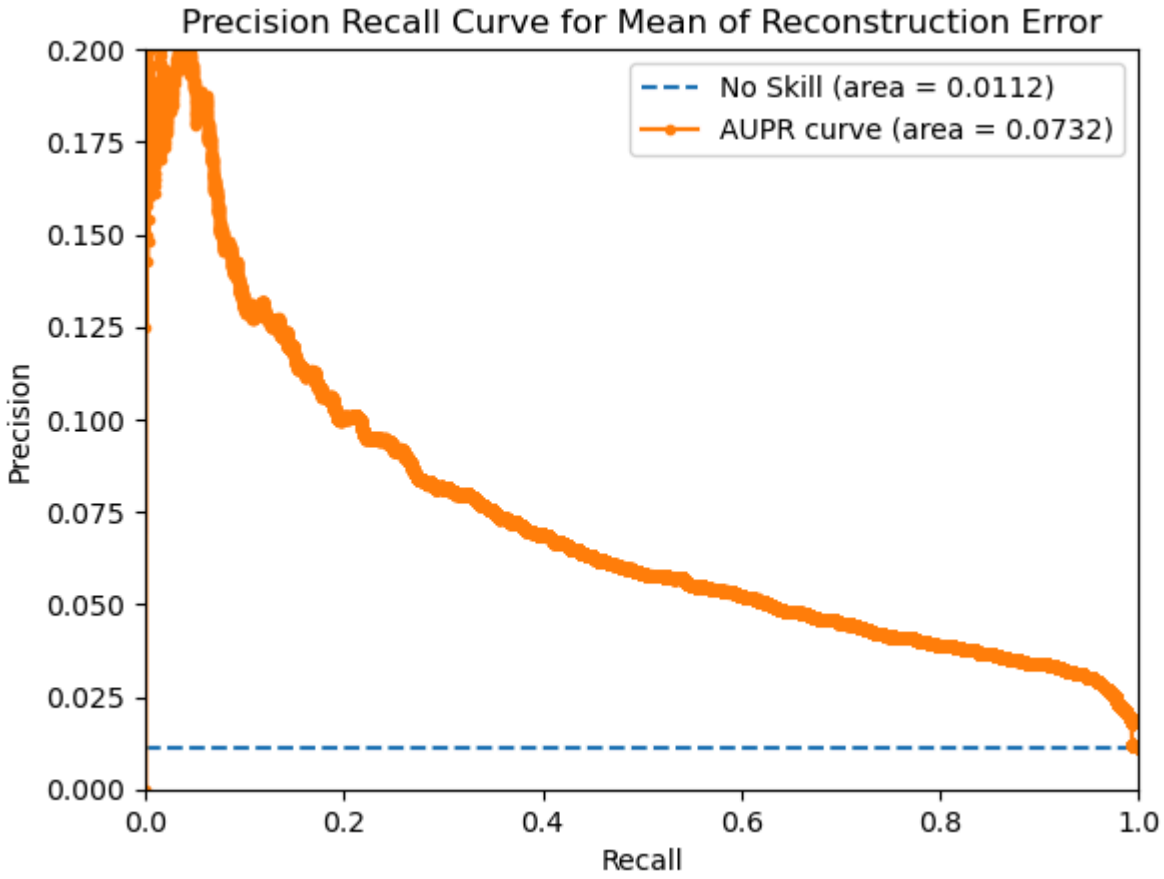

Receiver Operating Characteristic for Mean of Reconstruction Error
ROC curve (area = 0.9175)
True Positive Rate
False Positive Rate
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0

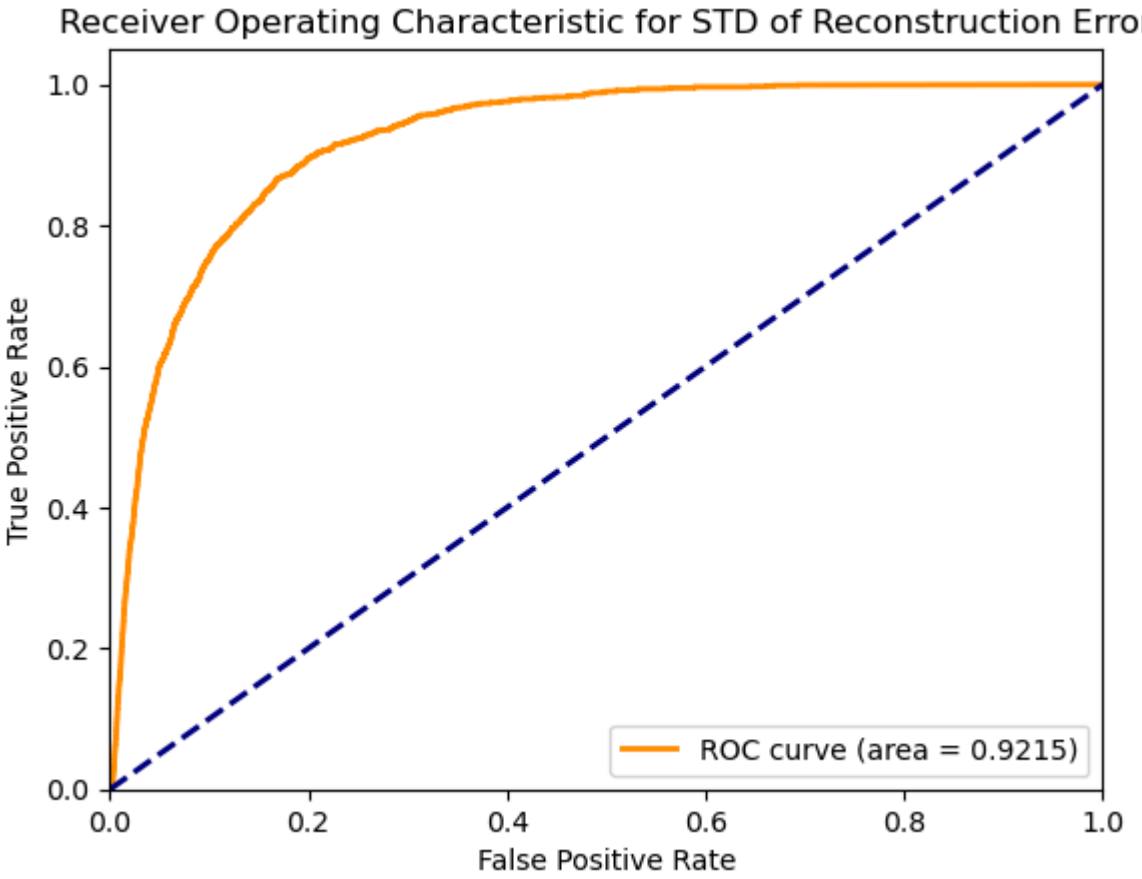

Precision Recall Curve for Mean of Reconstruction Error
No Skill (area = 0.0113)
AUPR curve (area = 0.1094)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0

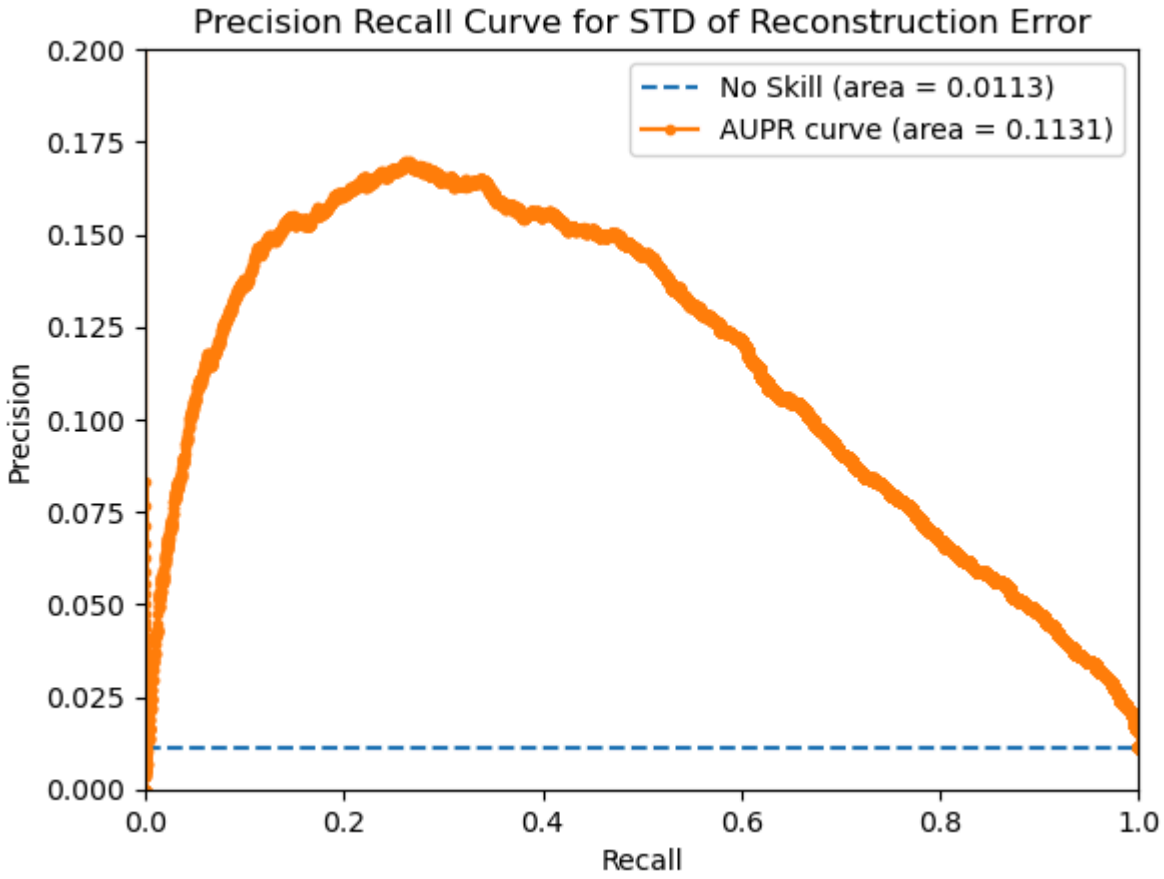

Receiver Operating Characteristic for STD of Reconstruction Error
ROC curve (area = 0.9029)
True Positive Rate
False Positive Rate
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0

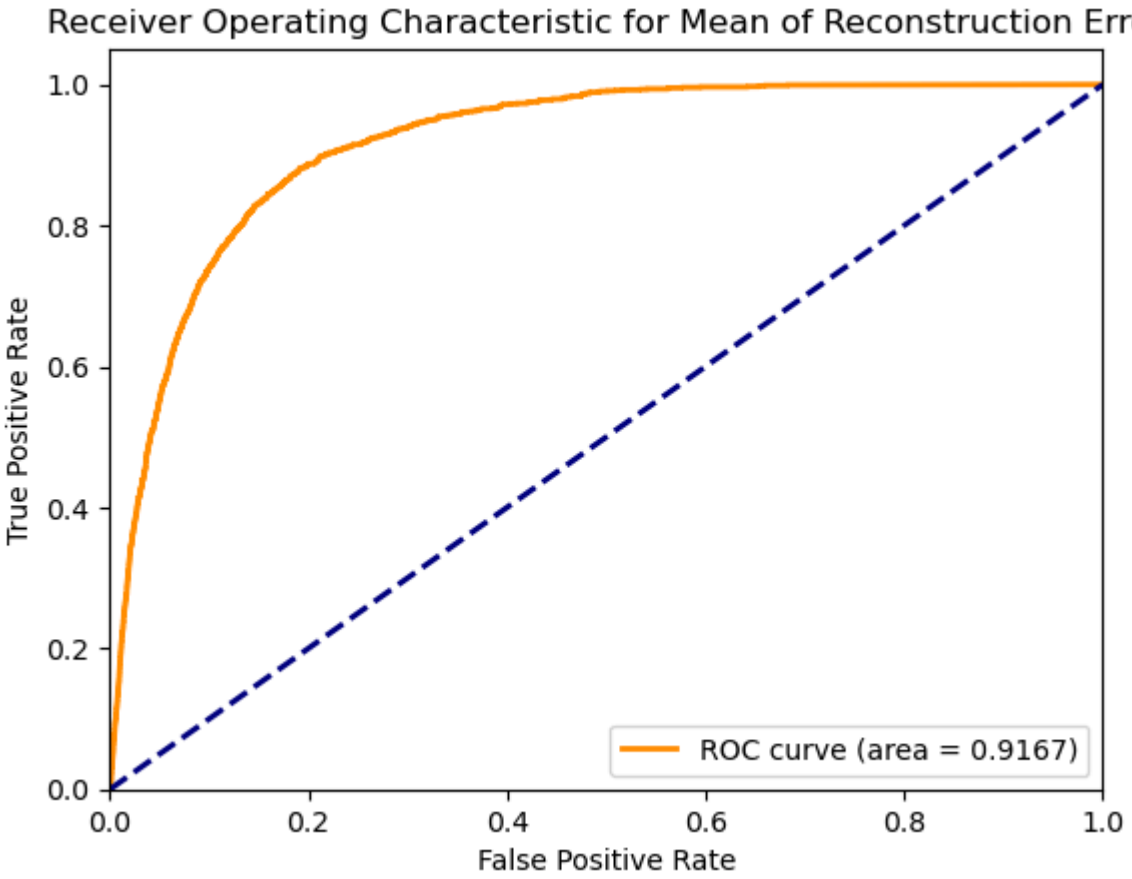

Precision Recall Curve for STD of Reconstruction Error
No Skill (area = 0.0112)
AUPR curve (area = 0.0838)
Precision
Recall
0.200
0.175
0.150
0.125
0.100
0.075
0.050
0.025
0.000
0.0
0.2
0.4
0.6
0.8
1.0

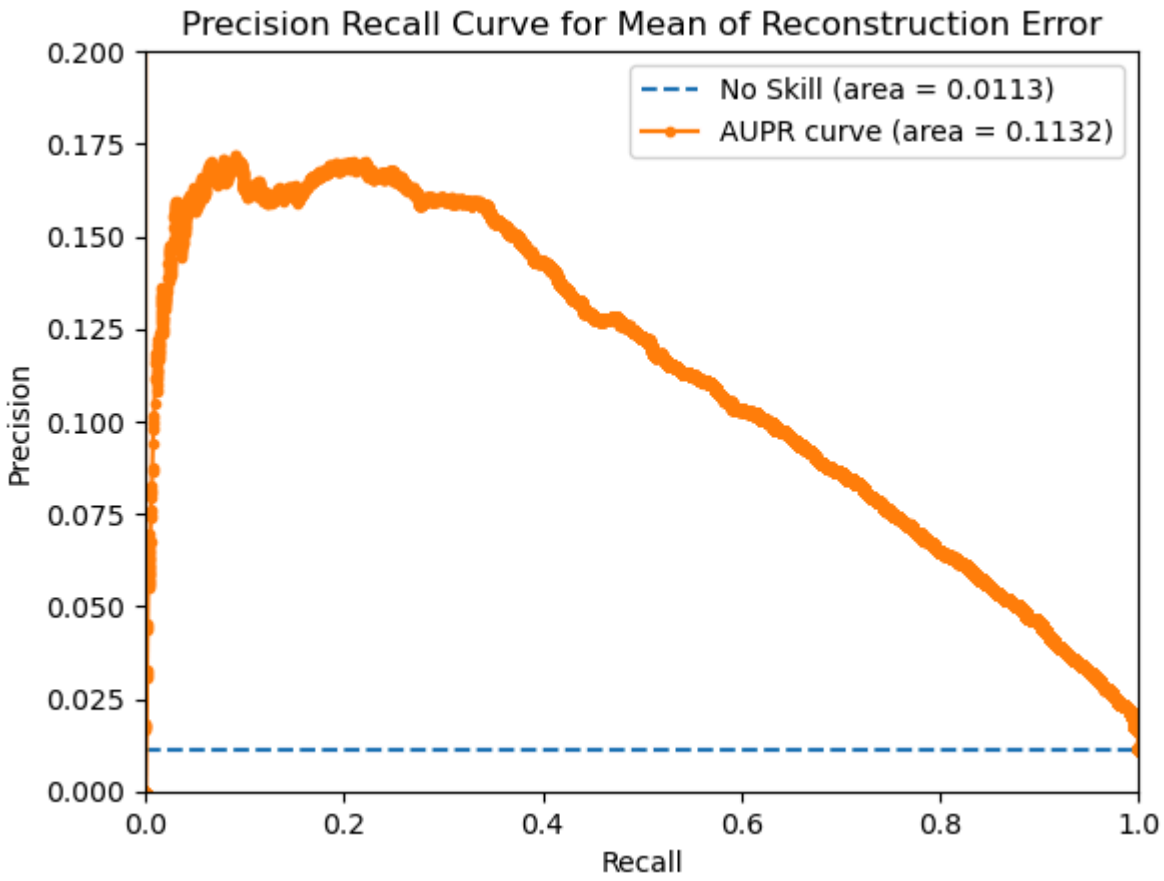

Receiver Operating Characteristic for Mean of Reconstruction Error
ROC curve (area = 0.8718)
True Positive Rate
False Positive Rate
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0


Precision Recall Curve for Mean of Reconstruction Error
No Skill (area = 0.0112)
AUPR curve (area = 0.0732)
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 = 0.9215)
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 = 0.1131)
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 = 0.9167)
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 = 0.1132)
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