

Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9268  
Epoch [1/20], Train Loss: 0.7668, Train Accuracy: 68.54%, Validation Loss: 1.4866, Validation Accuracy: 73.93%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9602  
Epoch [2/20], Train Loss: 0.5993, Train Accuracy: 74.59%, Validation Loss: 0.6358, Validation Accuracy: 82.70%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9753  
Epoch [3/20], Train Loss: 0.5444, Train Accuracy: 77.38%, Validation Loss: 0.3938, Validation Accuracy: 88.39%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9728  
Epoch [4/20], Train Loss: 0.5017, Train Accuracy: 78.77%, Validation Loss: 0.4999, Validation Accuracy: 86.02%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9793  
Epoch [5/20], Train Loss: 0.5073, Train Accuracy: 79.63%, Validation Loss: 0.3313, Validation Accuracy: 88.63%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9871  
Epoch [6/20], Train Loss: 0.4604, Train Accuracy: 80.31%, Validation Loss: 0.2551, Validation Accuracy: 91.59%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9826  
Epoch [7/20], Train Loss: 0.4372, Train Accuracy: 81.50%, Validation Loss: 0.3532, Validation Accuracy: 88.39%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9891  
Epoch [8/20], Train Loss: 0.4353, Train Accuracy: 81.06%, Validation Loss: 0.2393, Validation Accuracy: 90.76%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9794  
Epoch [9/20], Train Loss: 0.4189, Train Accuracy: 82.00%, Validation Loss: 0.5118, Validation Accuracy: 85.78%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9673  
Epoch [10/20], Train Loss: 0.4335, Train Accuracy: 81.41%, Validation Loss: 0.4431, Validation Accuracy: 83.89%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9848  
Epoch [11/20], Train Loss: 0.3927, Train Accuracy: 81.92%, Validation Loss: 0.3707, Validation Accuracy: 88.74%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])

AUC: 0.9862  
Epoch [12/20], Train Loss: 0.3930, Train Accuracy: 83.28%, Validation Loss:  
0.2835, Validation Accuracy: 92.30%  
Model output shape: torch.Size([13, 4])  
Labels shape: torch.Size([13])  
AUC: 0.9889  
Epoch [13/20], Train Loss: 0.3937, Train Accuracy: 81.35%, Validation Loss:  
0.2415, Validation Accuracy: 91.94%  
Early stopping triggered!  
Precision: 0.9207512296534602  
Recall: 0.919431279620853  
F1 Score: 0.919882419988934  
Balanced Accuracy: 0.9196367026095363