参数：

100%|██████████| 100/100 [00:05<00:00, 19.71trial/s, best loss: -0.677721856013465]

Best hyperparameters: {'colsample\_bytree': 0.9311725704132227, 'gamma': 0.08341770673960246, 'learning\_rate': 0.308842841445102, 'max\_depth': 12.0, 'min\_child\_weight': 1.0, 'n\_estimators': 130.0, 'subsample': 0.7369141603208492}

Model Accuracy: 0.9037

Precision: 0.6341

Recall: 0.7027

F1 Score: 0.6667

AUC-PR: 0.6777

AUC: 0.8603

Log Loss: 0.3022

Confusion Matrix:

[[218 15]

[ 11 26]]

预测结果

Predicted probabilities sum: 2.6281440258026123