Model Evaluation Report

Crypto Volatility Detection

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Milestone 3: Model Training & Evaluation

Model Performance Comparison

Model	PR-AUC	F1-Score	Precision	Recall	ROC-AUC
logistic_regressio	0.0873	0.1798	0.1004	0.8598	0.5079
xgboost	0.0925	0.1321	0.0866	0.2780	0.5128
baseline	0.0907	0.0000	0.0000	0.0000	0.5267

Primary Metric: PR-AUC (best: 0.0925)

PR-AUC is preferred due to class imbalance (spike events are rare)
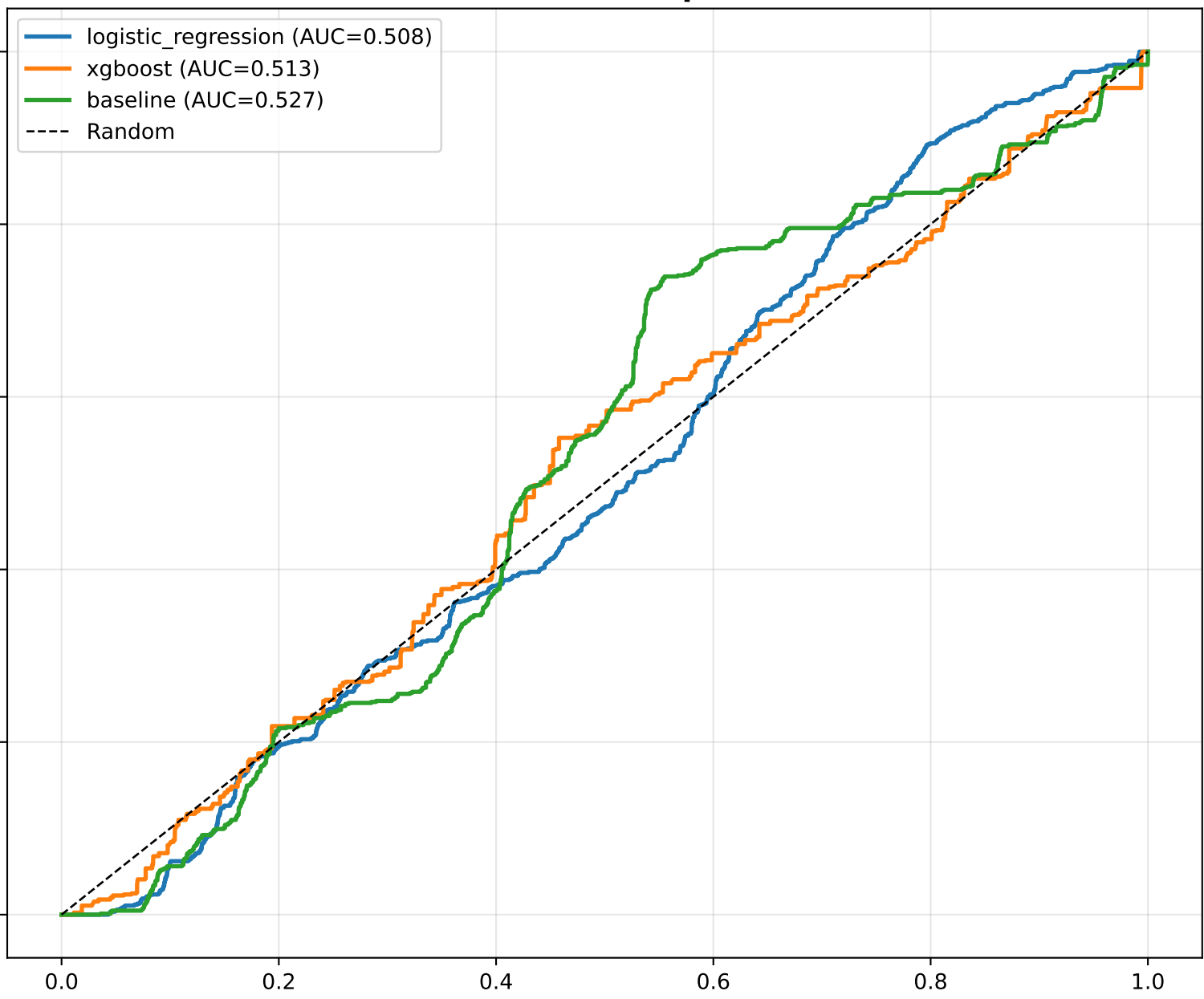
Precision-Recall Curves Comparison

- logistic_regression (AUC=0.087)
- xgboost (AUC=0.092)
- baseline (AUC=0.091)
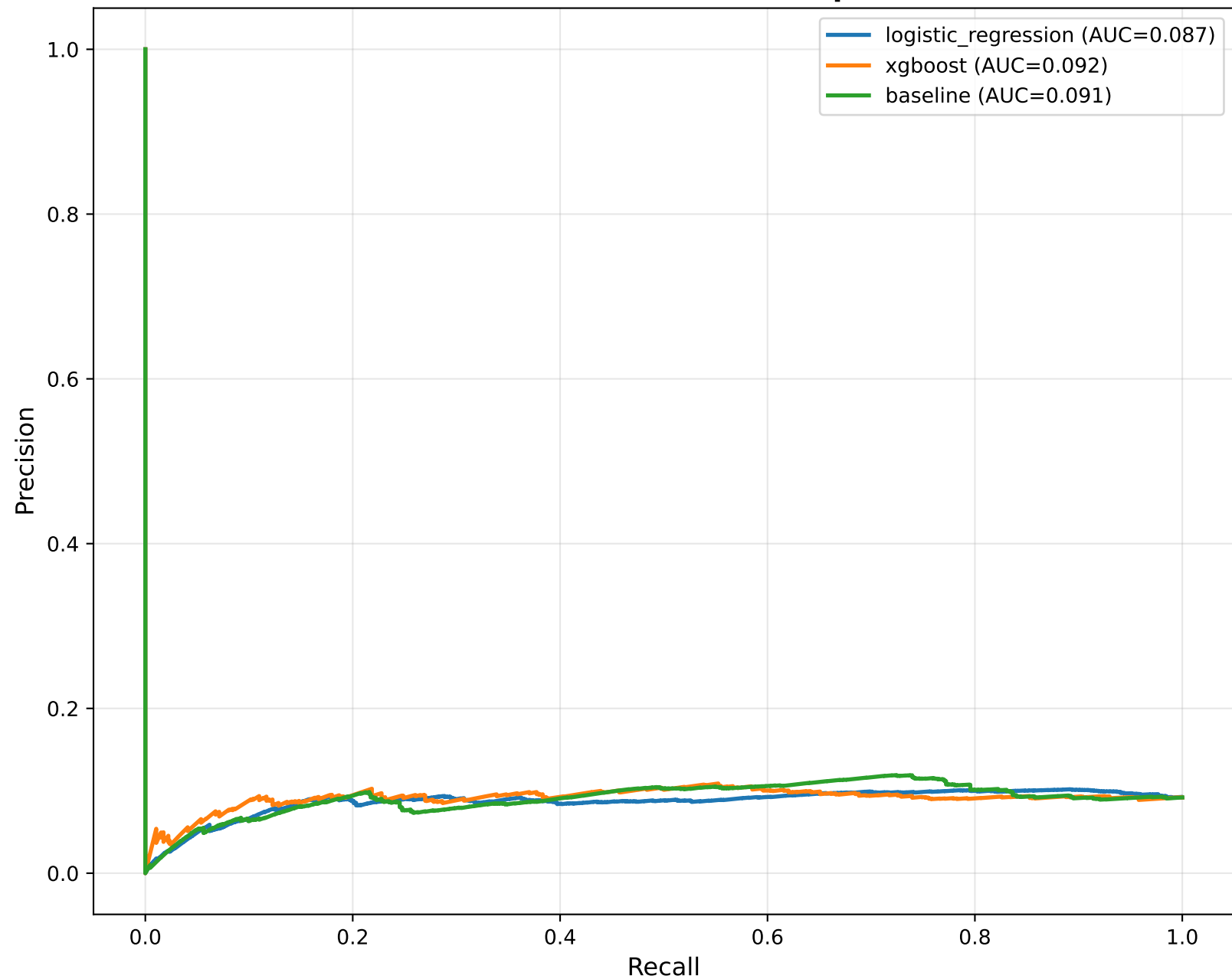
ROC Curves Comparison

- logistic_regression (AUC=0.508)
- xgboost (AUC=0.513)
- baseline (AUC=0.527)
- Random

Confusion Matrices (Test Set)

logistic_regression

	Predicted Normal	Predicted Spike
True Normal	1860	6595
True Spike	120	736

xgboost

	Predicted Normal	Predicted Spike
True Normal	5946	2509
True Spike	618	238

baseline

	Predicted Normal	Predicted Spike
True Normal	8455	0
True Spike	856	0
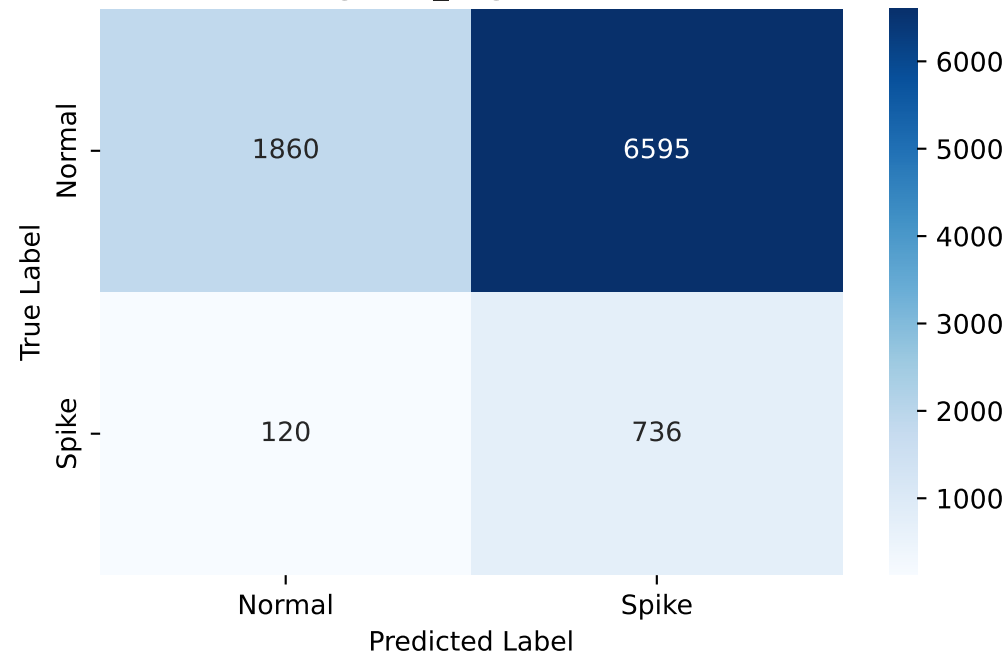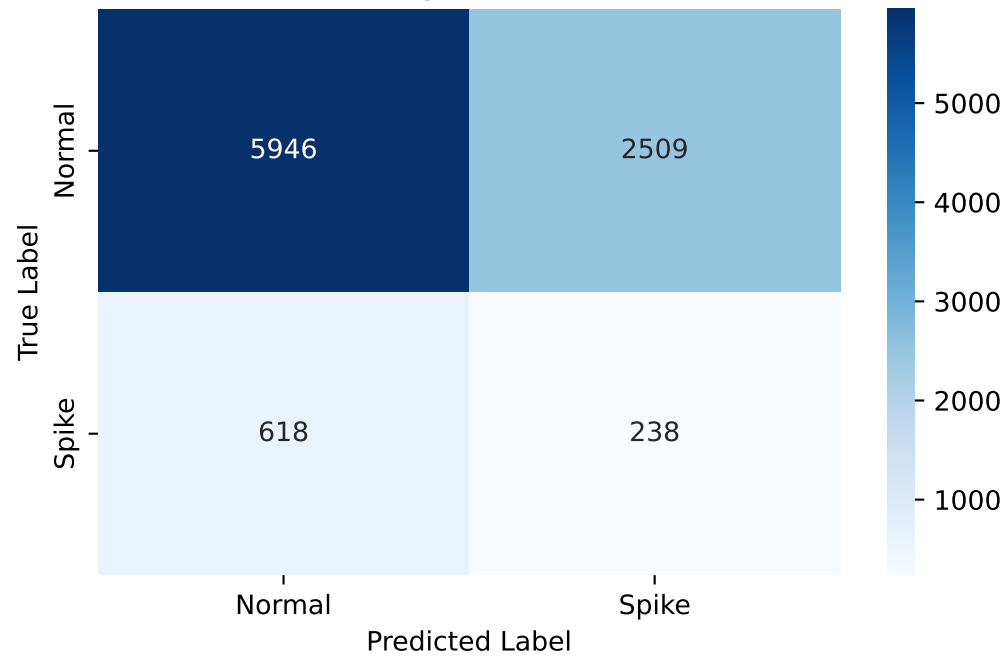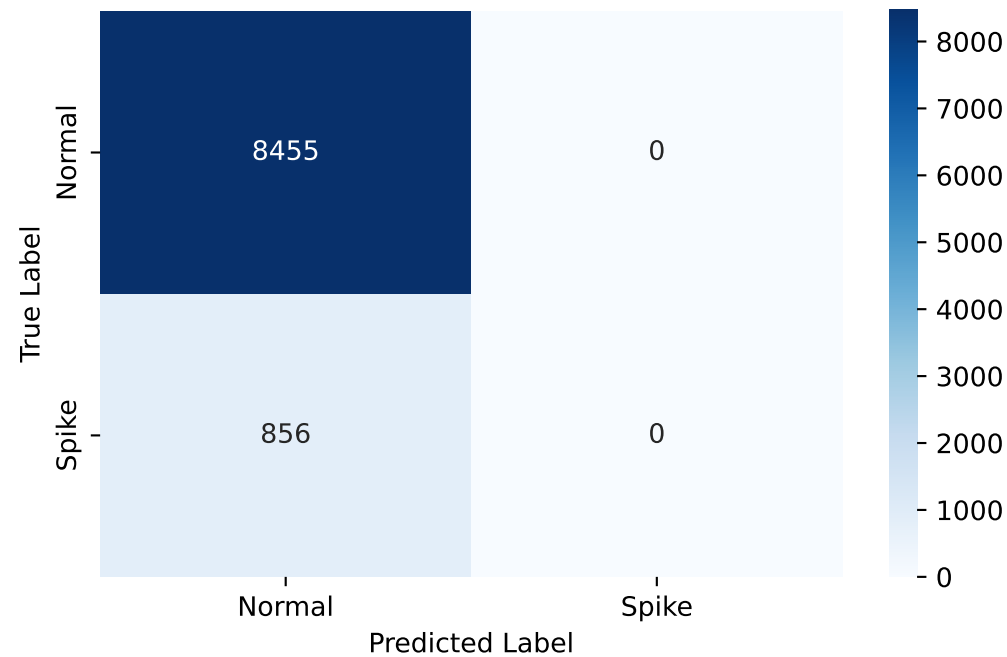
Feature Importance

xgboost (Importance)