

| Model Approach | Recall (Holdout) | Precision | PR-AUC | Key Strength | |
|------------------|------------------|-----------|--------|-----------------------------|--|
| Naive Baseline | 0.00% | 0.00% | N/A | High Accuracy, Zero Utility | |
| Logistic Regress | 38.10% | 8.00% | 0.52 | Fast, Linear Baseline | |
| LightGBM (Tuned) | 61.90% | 19.40% | 0.77 | Best single-model recall | |
| Soft Ensemble | 62.40% | 20.10% | 0.78 | Most stable generalization | |
| Neural Network | 58.20% | 15.50% | 0.69 | Scalability for larger data | |