

## **FEATURES) — Manual Random Search (Refit by ROC-AUC) — V**

Generated: 2026-02-26 00:09:13

TRAIN period:  $\leq$  2022-12-31 | TEST period:  $\geq$  2023-01-01

TRAIN size: 2,672 | TEST size: 787

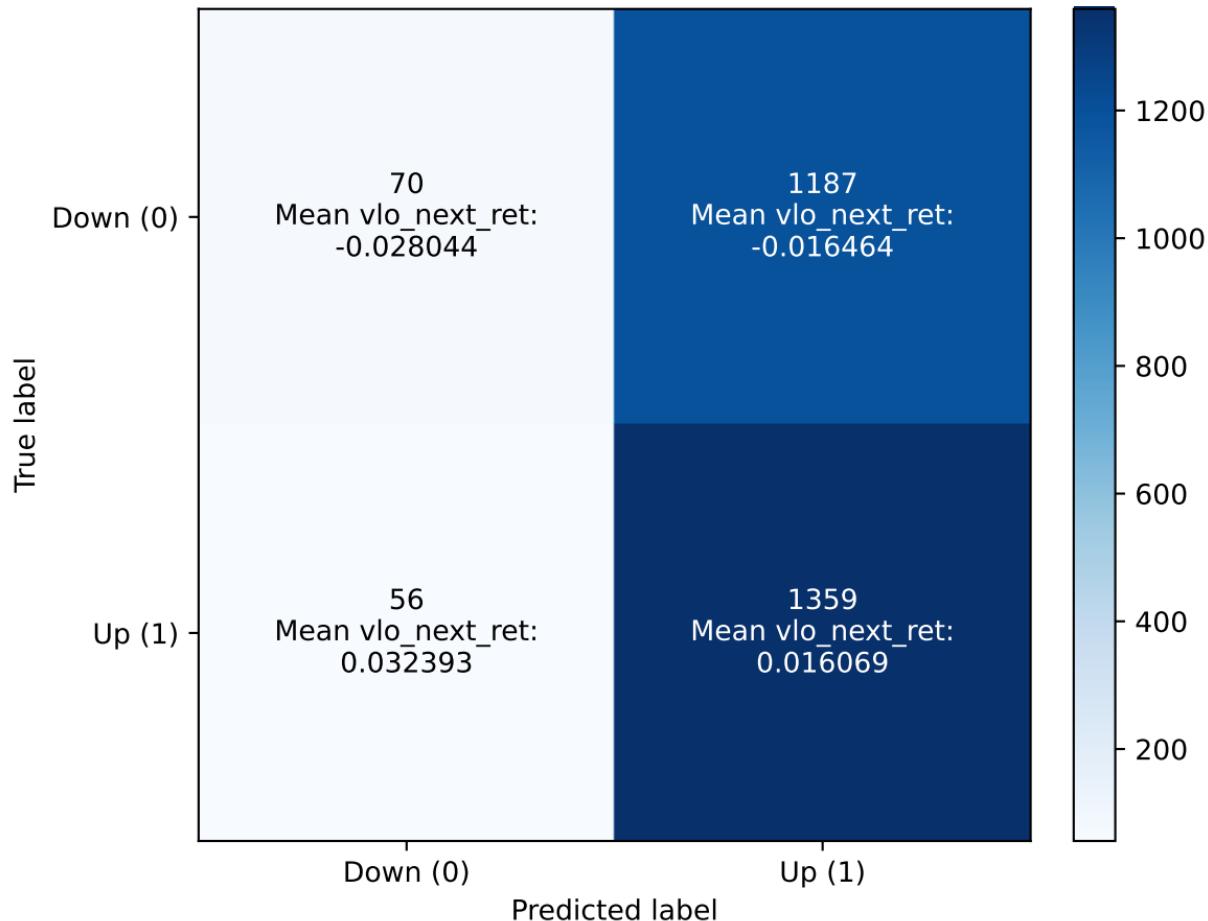
Features — scaled (float + VOL\_\*): 72 | passthrough: 5

Manual Random Search: n\_iter=60, refit='roc\_auc'

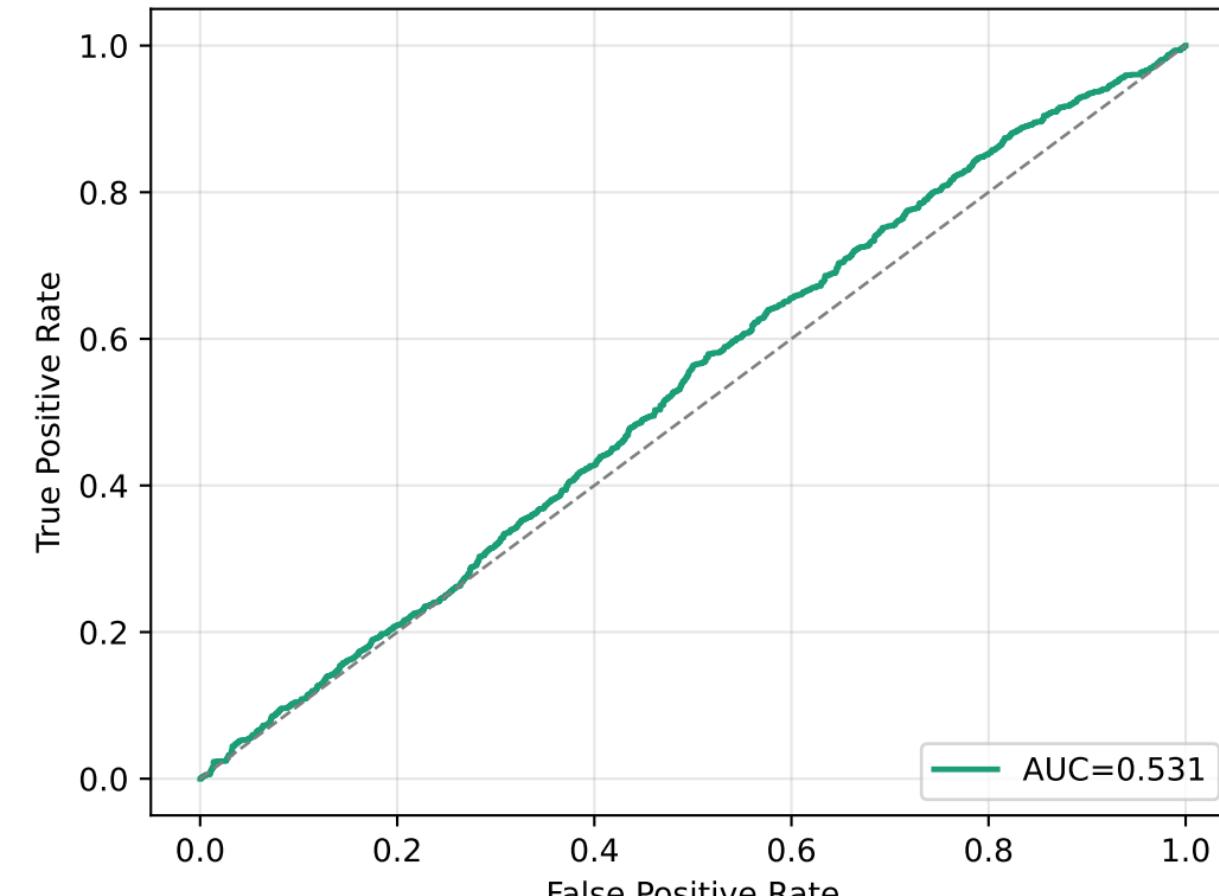
1, 'l2': 0.001, 'kernel\_size': 9, 'filters2': 32, 'filters1': 16, 'epochs': 80, 'dropout': 0.5, 'dense\_units': 16, 'batch\_si

Best CV ROC-AUC: 0.5396

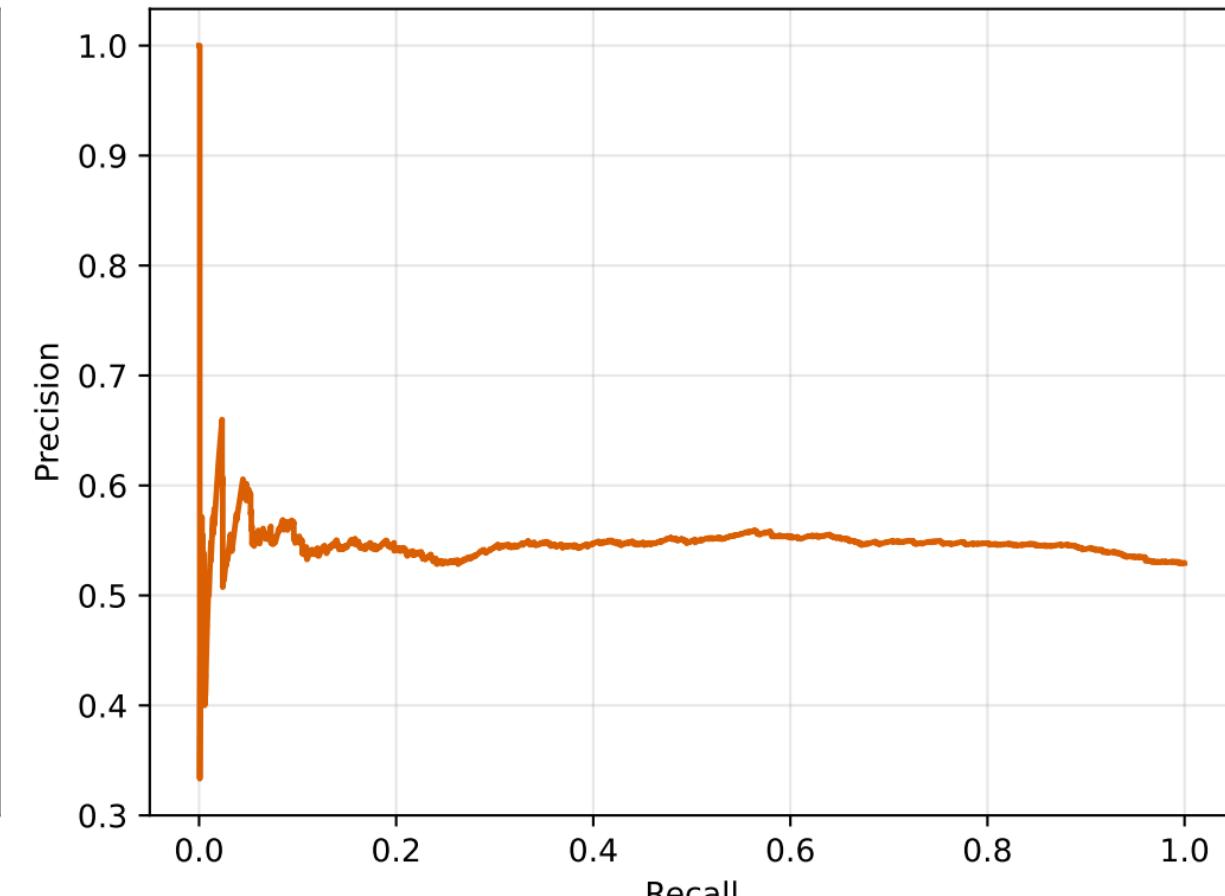
Confusion Matrix — TRAIN (CV predictions, best CNN feature-conv)



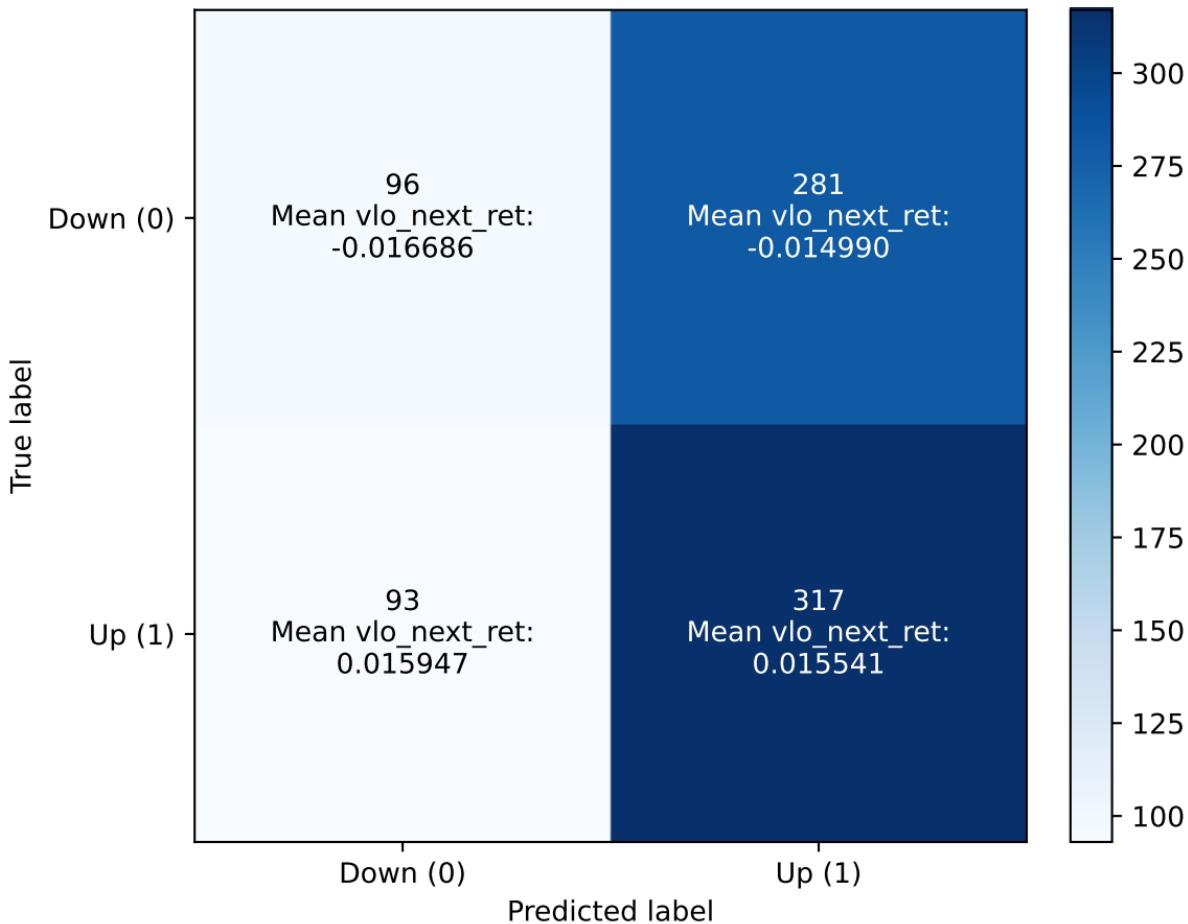
ROC Curve — TRAIN (CV pooled)



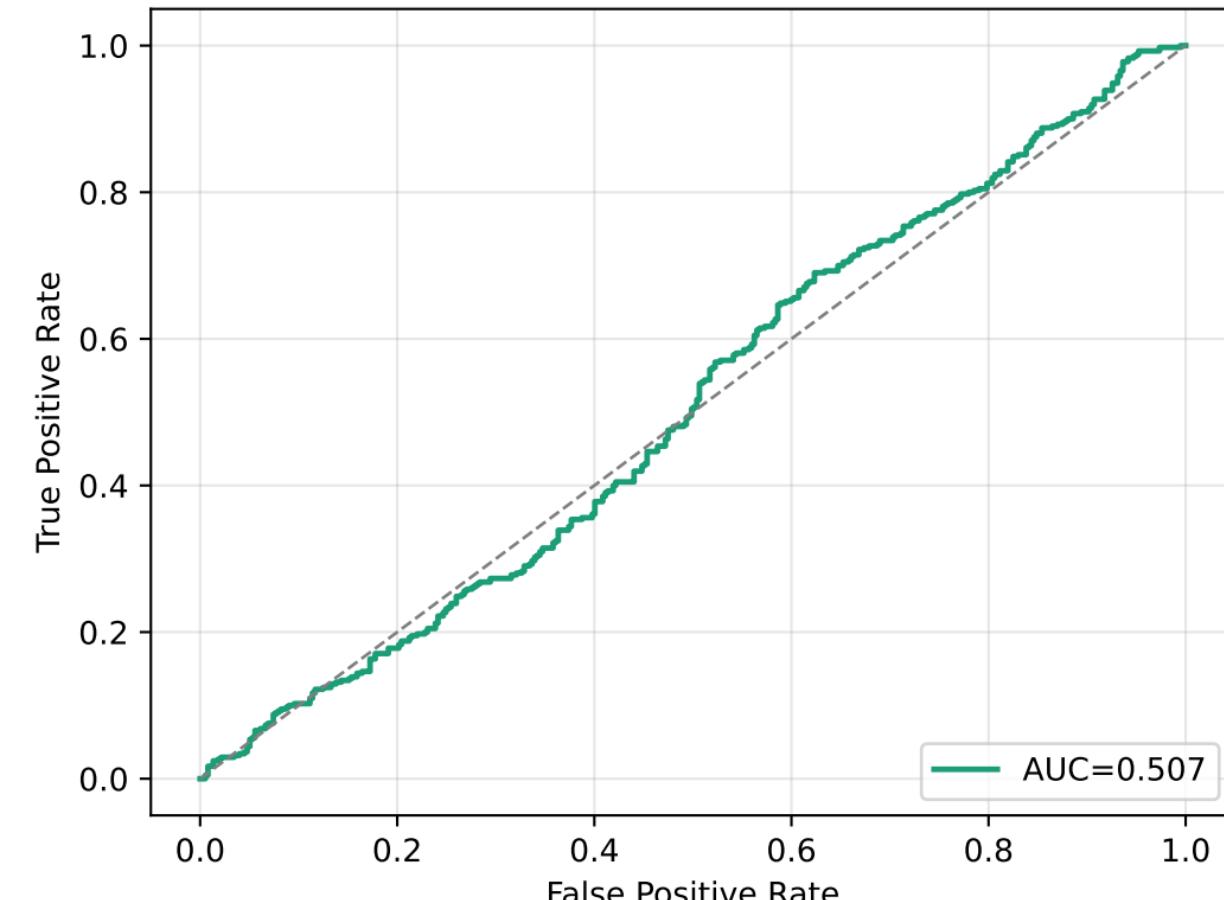
Precision-Recall — TRAIN (CV pooled)



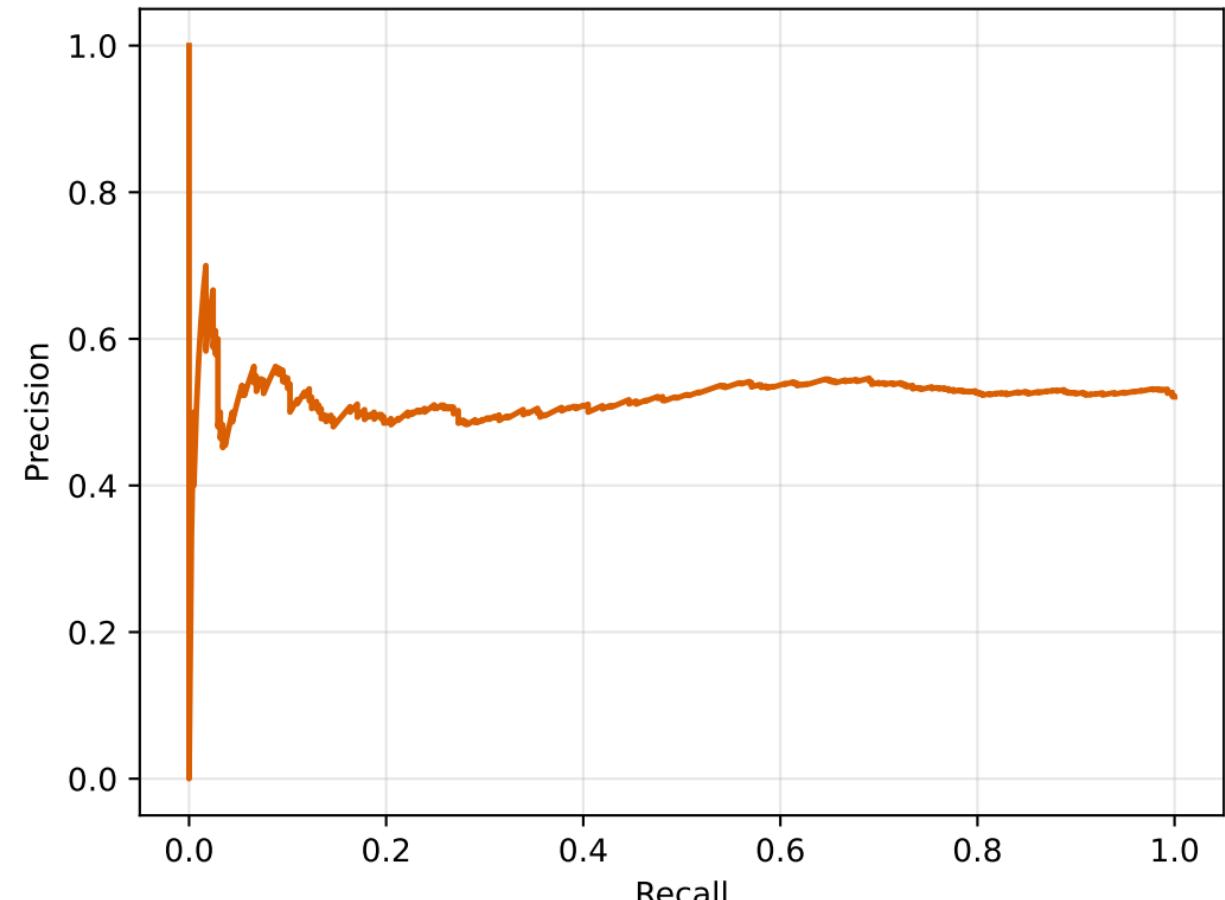
### Confusion Matrix — TEST (2023+)



### ROC Curve — TEST (2023+)



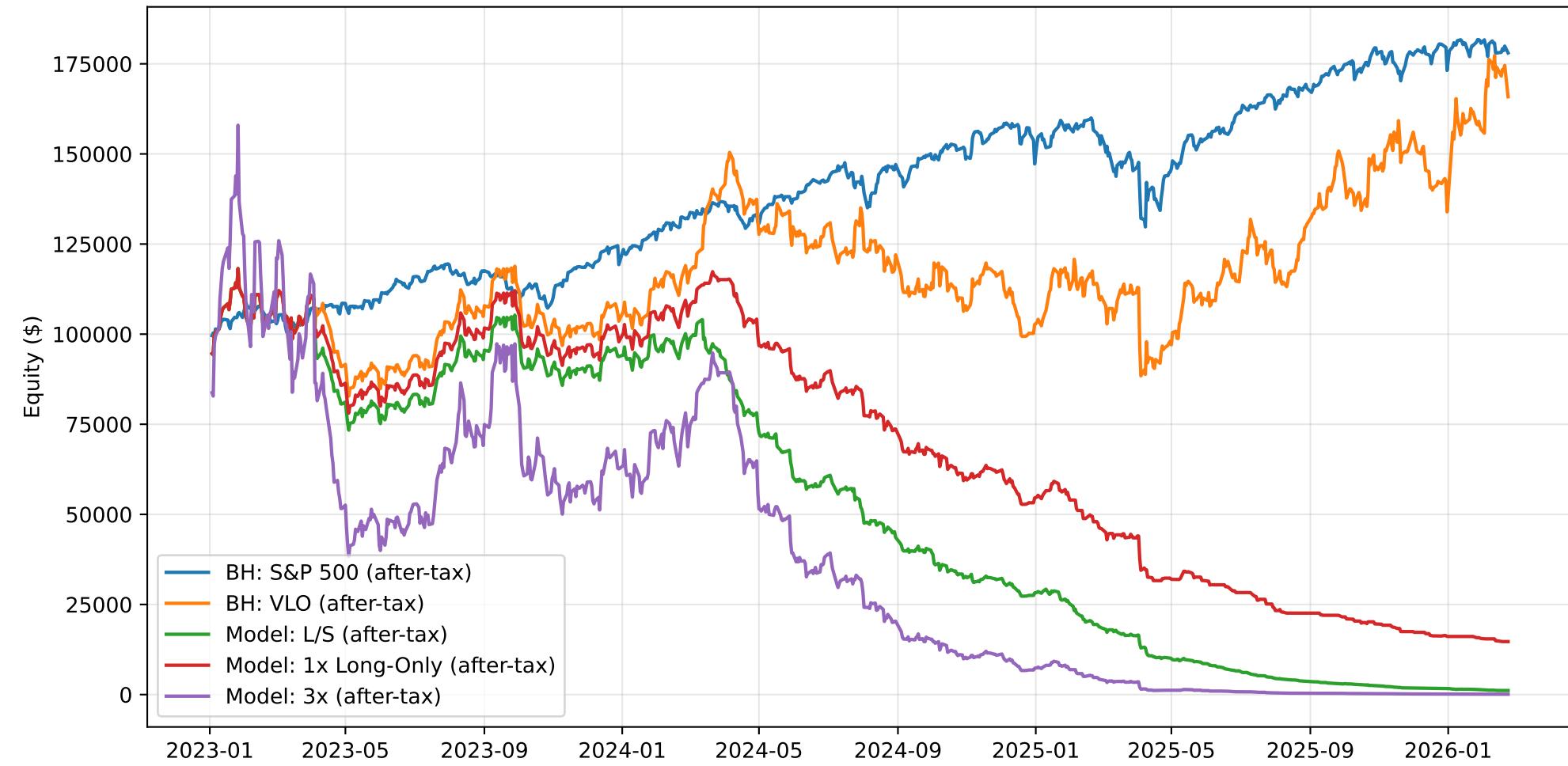
### Precision-Recall — TEST (2023+)



## Classification Report — TEST (2023+)

	precision	recall	f1-score	support
0	0.508	0.255	0.339	377
1	0.530	0.773	0.629	410
accuracy			0.525	787
macro avg	0.519	0.514	0.484	787
weighted avg	0.519	0.525	0.490	787

## After-Tax Equity Curves — TEST: 2023 to most recent



# Annual After-Tax Performance (2023+), incl. Average

	BH: S&P 500 (after-tax)	BH: VLO (after-tax)	Model: L/S (after-tax)	Model: 1x Long-Only (after-tax)	Model: 3x (after-tax)
2023	19.78%	9.50%	-0.89%	3.46%	-25.24%
2024	19.21%	-3.45%	-70.07%	-45.61%	-88.48%
2025	13.32%	29.79%	-94.04%	-70.58%	-98.21%
2026	-0.32%	16.09%	-32.41%	-8.81%	-24.95%
Average	13.00%	12.98%	-49.35%	-30.39%	-59.22%

## Run Metadata & Time-Split Summary

```
Report saved: /mnt/batch/tasks/shared/LS_root/mounts/clusters/dvandyk1/code/Users/dva  
Scaler/Normalizer saved: /mnt/batch/tasks/shared/LS_root/mounts/clusters/dvandyk1/cod  
Preprocessor saved: /mnt/batch/tasks/shared/LS_root/mounts/clusters/dvandyk1/code/Use  
Model saved: /mnt/batch/tasks/shared/LS_root/mounts/clusters/dvandyk1/code/Users/dva
```

```
TRAIN period: ≤ 2022-12-31 | TEST period: ≥ 2023-01-01
```

```
TRAIN size: 2,672 | TEST size: 787
```

```
CV folds: 5
```

```
Random search n_iter: 60
```

```
Scaled columns (float + VOL_*): 72
```

```
Passthrough numeric columns: 5
```

```
Best params: {'use_batchnorm': True, 'pool_type': 'none', 'patience': 12, 'normalizer':
```

```
Best CV ROC-AUC: 0.5396
```

```
TEST ROC-AUC: 0.5074 | TEST Acc: 0.5248
```

```
CNN input reshape: (samples, n_features, 1)
```

```
Backtest assumptions (TEST only, AFTER-TAX curves shown):
```

```
Initial capital: $100,000
```

```
Tx cost per side: 2.00 bps
```

```
Taxes: LT 20.0% | ST 37.0%
```

```
Short borrow APR: 0.30%
```

```
3x daily cost (financing+expense): 0.0595% when pos>1
```