

Multi-Layer Detection: Key Results Summary

Spread-Only Detection

F1: 93.5%
AUC: 98.7%
Recall: 100%

Combined @ 55% Content

F1: 78.9%
vs Content-Only: 73.7%
+5.2 pp improvement

Maximum Improvement

AUC: +5.8 pp
F1: +5.2 pp
@ 55% content acc

- Spread patterns provide orthogonal signal to content detection
- Multi-layer fusion improves robustness to generator evolution
- Spread-only achieves 93% F1 without content analysis
- Improvement increases as content detectors degrade
- Combined detection reduces false negatives by 39%