

METHODS PAPER

# Forensic mortgage fraud detection

## Methods, rules, and evidence ledger.

Five detection modules, forty-six rules, citation per flag. APRA CPG 234 aligned.

### 01 . WHAT THIS PAPER IS

A working draft of the Trutina methods. The detection engine measures four properties of every payslip, employer letter, and bank statement in a loan application. This paper names the rules, states their tests, and documents the evidence ledger that retains the result for seven years.

### 02 . THE FIVE DETECTION MODULES

- PM . Producer metadata rules. Detects PDF producer / font-subset / object-stream mismatches.
- IC . Identity coherence. 5 rules. Checks that fields agree across files (name, BSB, ABN, address).
- IA . Incorrect arithmetic. 1 rule. Validates gross - PAYG = net and super at SG rate against base.
- EV . Employer verification rule. Compares reported ABN against ABR live + ASIC headcount band.
- NC . Network clustering rules. Detects similar producer signatures across a broker's last 60 days.

### 03 . EVIDENCE LEDGER

Every flag fired records: rule ID, source filename, SHA-256 hash, byte offset, fired-at timestamp, evaluation duration, and severity. Retained 7 years per APRA CPG 234 retention requirements. Ledger entries are immutable. The ledger system of pointers to the source PDFs; Trutina retains evidence pointers, not the source documents themselves.

### 04 . WHAT THIS PAPER DOES NOT YET COVER

Calibration metrics (measured fraud rate, false-positive rate, time-to-viewer time, etc.). Those numbers will be published quarterly once the customer cohort supports independent measurement. Until then, the methodology stands on the named rules above and the published test definitions.