File: X51008123451.png SHA-256: 1b67fa81ddc24765… Size: 748×1271 px Analysed: 2026-05-12 00:28:40 UTC Model: FraudX v2-multi (ResNet-18, ep13, thr=0.08)

VERDICT — High risk

Likely forged

Multiple regions show strong evidence of editing.

99%

CNN forgery confidence

Patch CNN: High risk
forgery confidence 99%

VAT QR: No QR
no ZATCA QR detected

Key findings

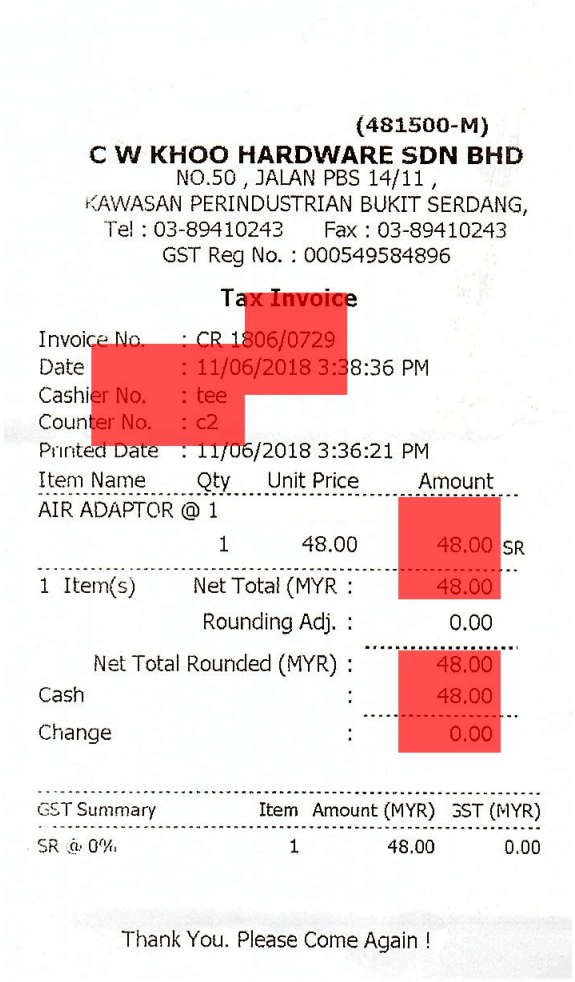
- Multiple regions show strong evidence of editing.
- Showing the top 5 highest-confidence regions (highest score 100%). 45 of 150 text-bearing regions exceeded the model's threshold overall.
- Edit type predicted across the top 5 regions: 4 × copy-paste edits and 1 × deletions / erasures.
- Targeted fields: 5 × Total / payment lines.
- This file is an exact duplicate of one already analysed in this session.

VAT QR check

No ZATCA-format VAT QR detected on this receipt.

Visual evidence

Document with suspicion heatmap (red = CNN-flagged)



(481500-M)
C W KHOO HARDWARE SDN BHD
NO.50 , JALAN PBS 14/11 ,
KAWASAN PERINDUSTRIAN BUKIT SERDANG,
Tel : 03-89410243 Fax : 03-89410243
GST Reg No. : 000549584896

Tax Invoice

Invoice No. : CR 1806/0729
Date : 11/06/2018 3:38:36 PM
Cashier No. : tee
Counter No. : c2
Printed Date : 11/06/2018 3:36:21 PM

Item Name	Qty	Unit Price	Amount
AIR ADAPTOR @ 1			
	1	48.00	48.00 SR
1 Item(s)	Net Total (MYR :		48.00
	Rounding Adj. :		0.00
	Net Total Rounded (MYR) :		48.00
Cash	:		48.00
Change	:		0.00

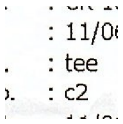
GST Summary	Item	Amount (MYR)	GST (MYR)
SR @ 0%	1	48.00	0.00

Thank You. Please Come Again !

Top suspicious regions

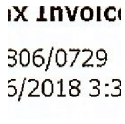
Each thumbnail is the 128×128 patch fed to the CNN, with its score and predicted edit type / field.

1



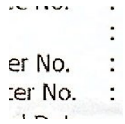
100%
CPI
Total/payment

2



100%
CPI
Total/payment

3

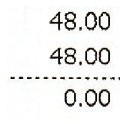


99%
CPI
Total/payment

4

99%
CPI
Total/payment

5



99%
CUT
Total/payment

Methodology & raw data

Approach

ResNet-18 patch classifier (128×128, stride 64) trained on FINDIT2 (Tornes et al., ICDAR 2023). Two auxiliary heads classify the modification technique and the document field affected; the binary backbone is frozen so the headline patch precision (92.25%) is preserved while adding explainability. The image-level fraud score is the top-k mean of patch probabilities over text-bearing regions only (edge density ≥ 0.02). The Saudi VAT QR check validates the ZATCA Phase-1 TLV format and cross-checks the QR's declared totals against pytesseract OCR of the printed receipt body.

Reported numbers vs paper

METRIC	OURS	PAPER
Patch precision	92.25% (this work)	79.41% (paper OH-JPEG)
Patch F1 / AUC	91.79 / 0.97	—
Image-level F1 (top-k)	29.66	28.39 (paper ChatGPT-relaxed)
Mod head test acc	CPI 73 · CUT 100 · IMI 38 · PIX 55 · Other 14	
Entity head test acc	Total/payment 67 · Metadata 47 · Product 27 · Company 24	

Raw model output

• Patches scored: 209 Text-rich: 150 Flagged ≥ 0.08: 45
• Top-k mean fraud score: 0.9928 CNN risk: HIGH Duplicate: 1.00 (exact_duplicate)

• Patch CNN flagged 45 of 150 text-rich patches (top score 1.00).
• Top 5 suspicious regions clustered around image coordinates (192,448), (320,384), (128,448), (512,640), (512,832).
• Predicted modification mix across top regions: 4× CPI, 1× CUT.
• Predicted entity types: 5× Total/payment.
• Document is an EXACT duplicate of a file already analysed in this session (resubmission).