WSQ Version 3.1

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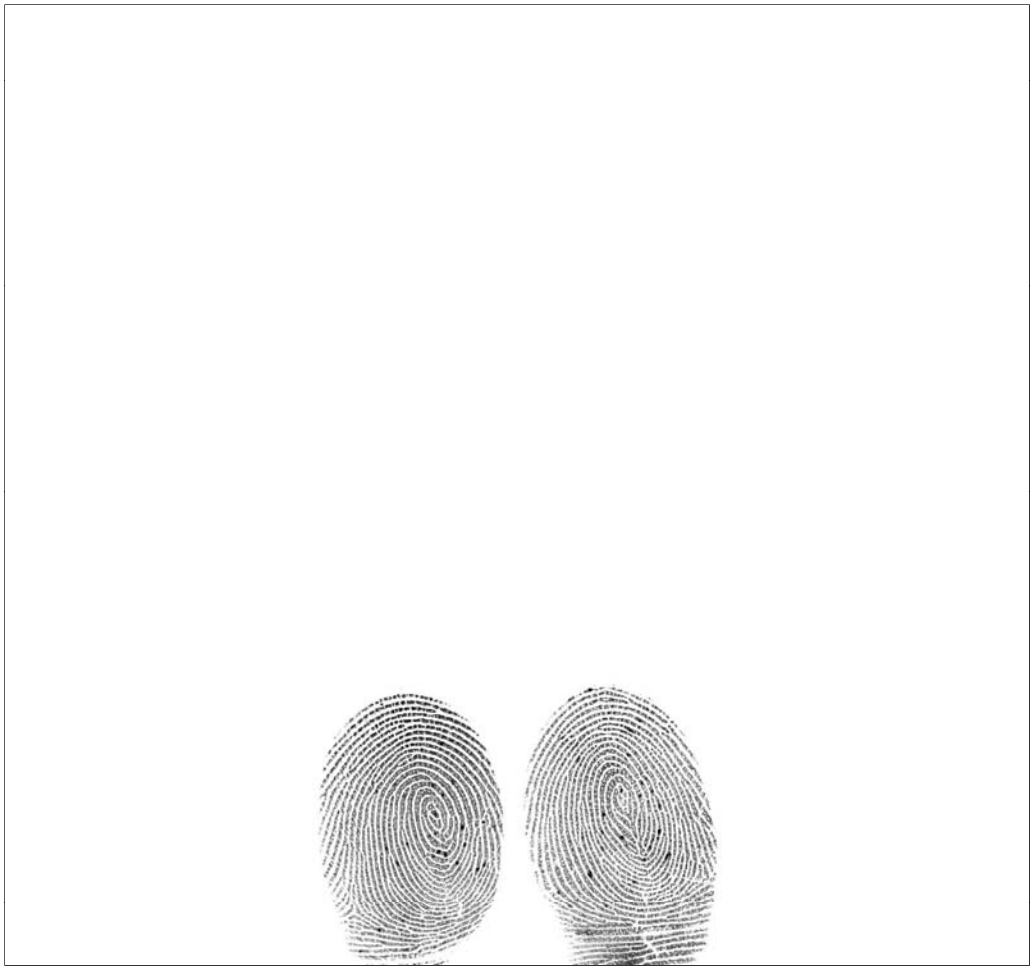
WSQ - Fingerprint Compression

Outline

- Two Thumb degradation
- Why degradation occurs
- Solution to the problem
- ANSI/NIST-ITL 1-2011 Comments

WSQ - Fingerprint Compression

Original

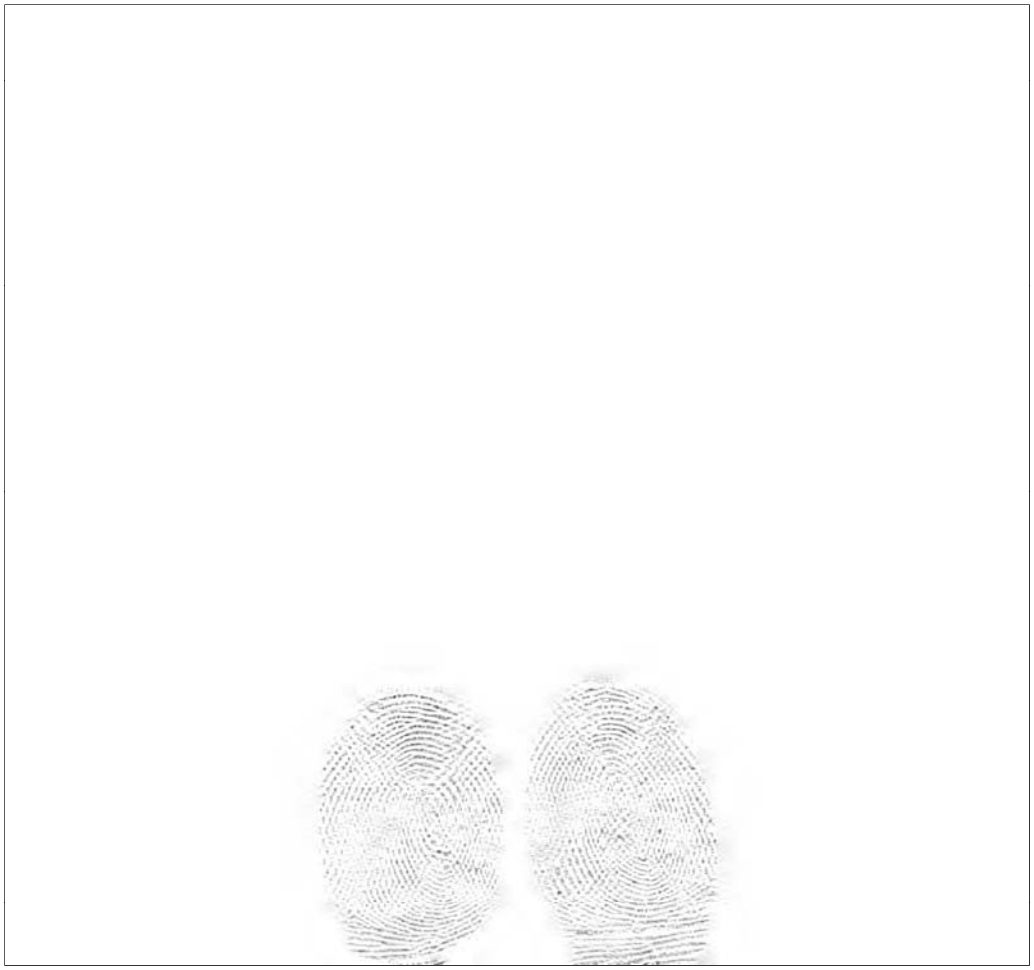


WSQ - Fingerprint Compression

Original

WSQ - Fingerprint Compression

WSQ



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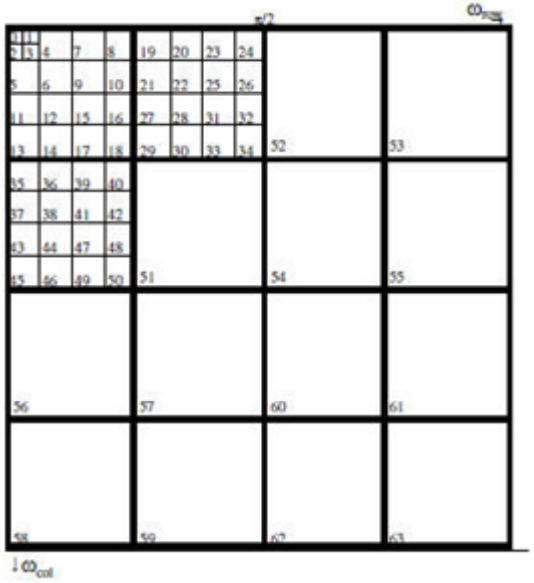
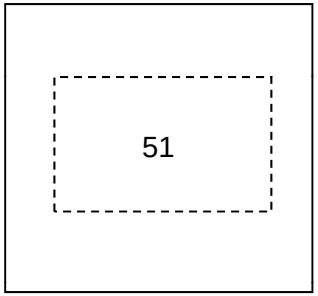
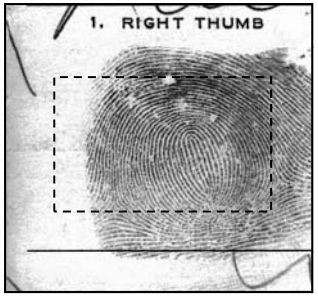
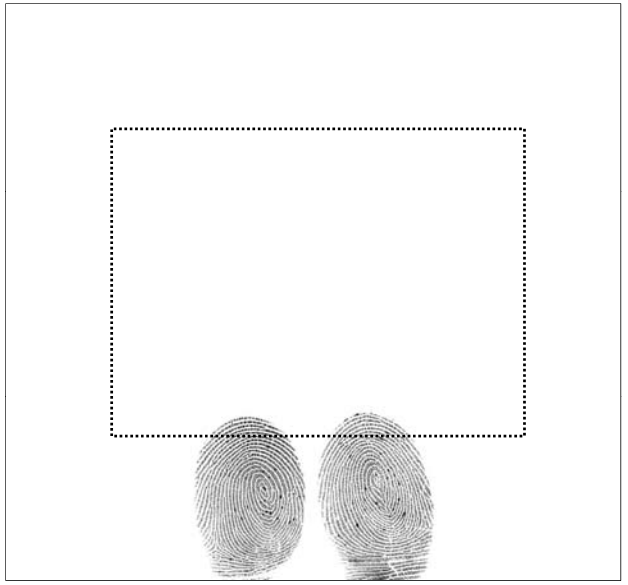




WSQ - Fingerprint Compression





- This is not a problem with legacy compressed 10-print scanned ink data and live-scan data captured on 2 inch high platens.
- It is occurring with live-scan data captured on 3 inch high platens ... mainly with the two-thumb capture.

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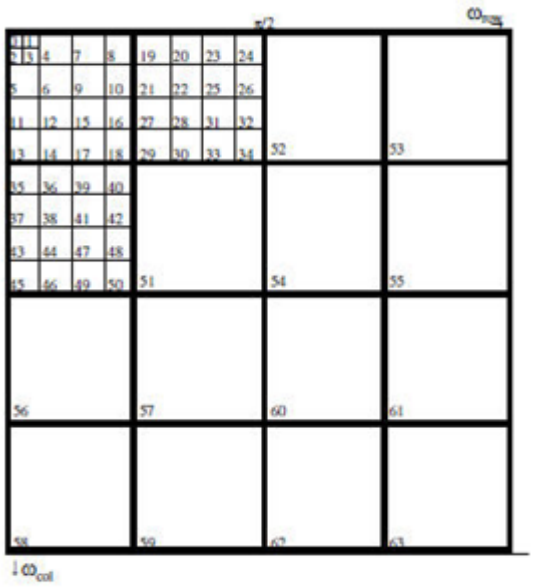
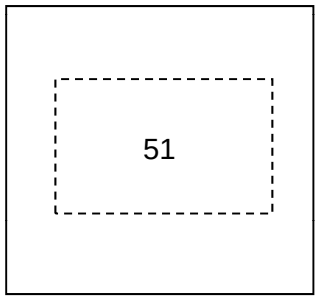
Solution

If, $\sum_{k=5}^{64} \sigma_k^2 > 20{,}000$ subregion variance, otherwise use full region for variance computation

use





This only changes “encoder” ... “decoder” stays the same.

NIST IR 7746 - http://www.nist.gov/itl/iad/ig/wsq.cfm

ANSI/NIST-ITL 1-2011

- Table 12 - Add “Version 3.1” to “Algorithm Name”
  - “WSQ20” still works because WSQ decoding doesn’t change.

- Section 3 “Normative references” – add to the list … “IAFIS-IC-0110 (V3.1) WSQ Gray-scale Fingerprint Image Compression Specification, October 4, 2010.”

- Section 7.20 (Page 82/paragraph 2) – change date in WSQ reference … “WSQ Gray-scale Fingerprint Image Compression Specification, October 2010”

- Section 7.20.1 – add text … “WSQ Version 3.1 is strongly recommended for live-scan fingerprint captures on platens that are larger than 2” in height to avoid data loss during compression.”

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