Previous Work
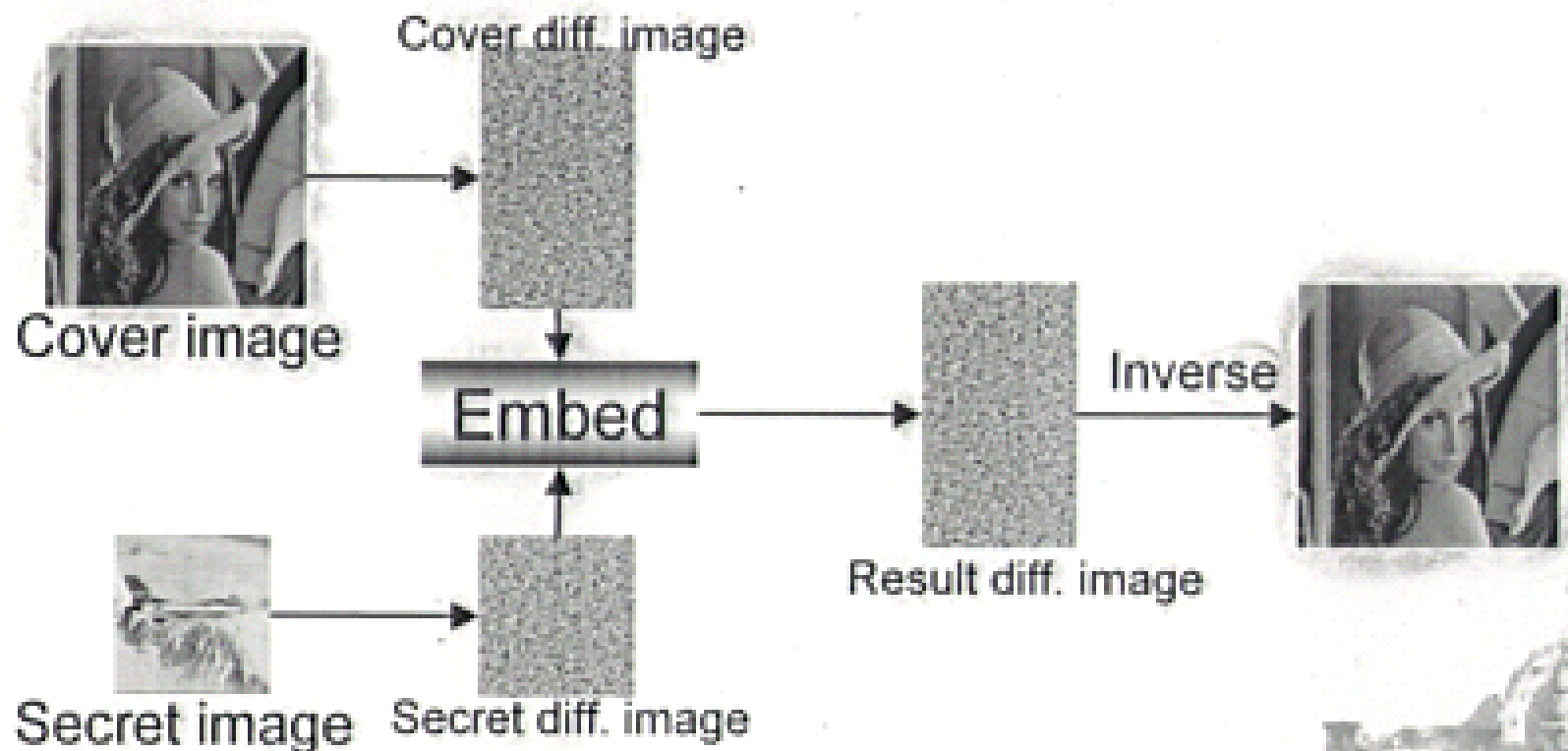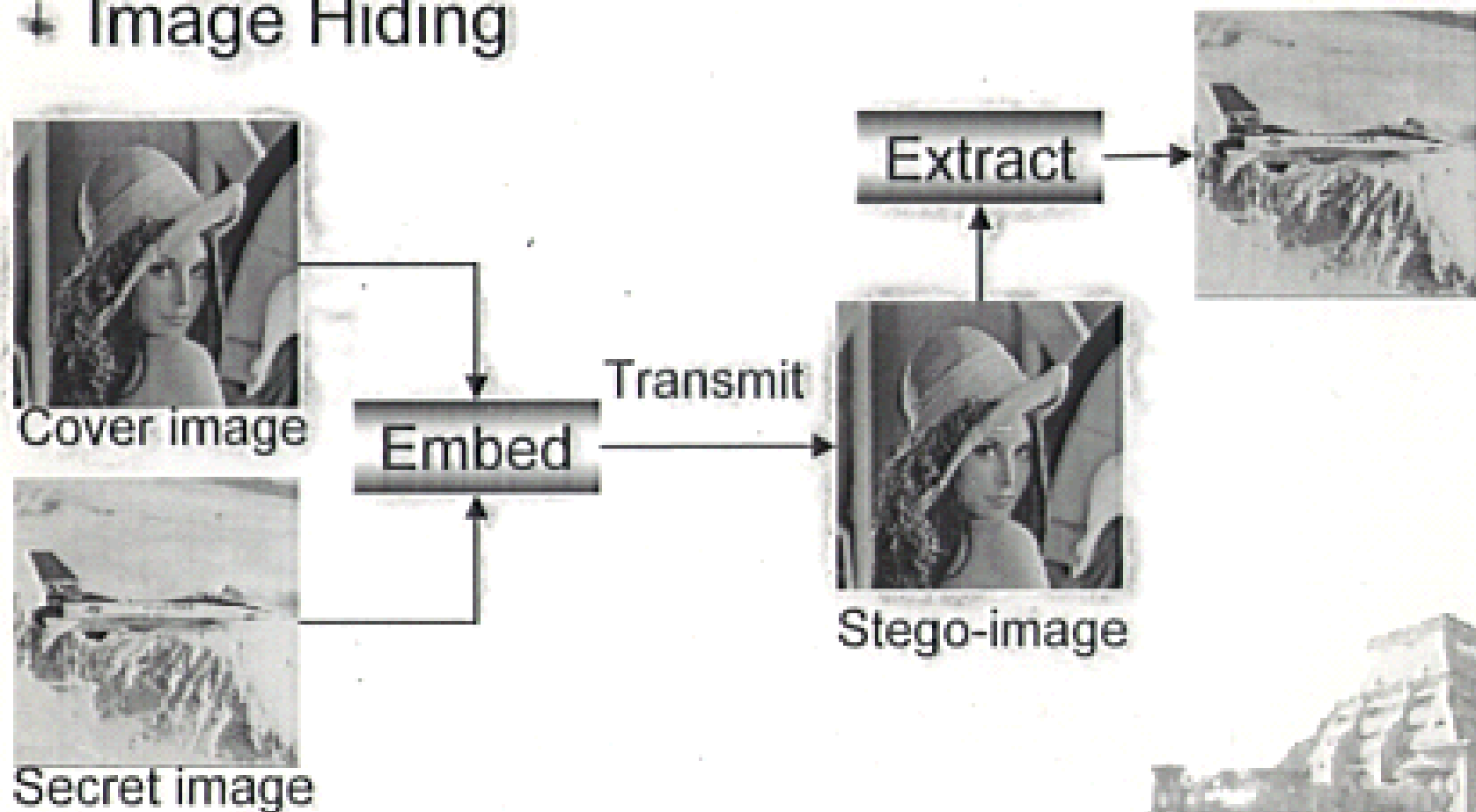
* D. C. Wu & W. H. Tsai, "Spatial-domain image hiding using image differencing," *IEE Proc.-Vis. Image Signal Process,* 147(1), 2000, pp. 29-37.

Cover diff. image

Cover image

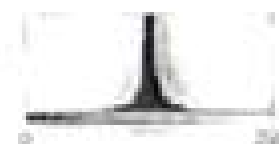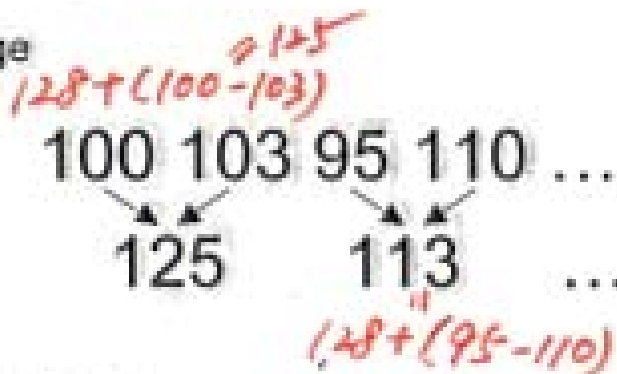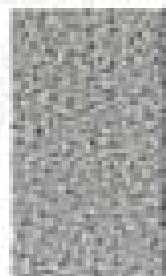Secret image   Secret diff. image

Embed

Result diff. image

Inverse

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Introduction

+ Image Hiding

Cover image

Secret image
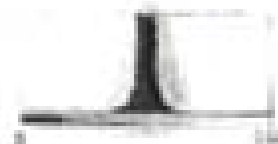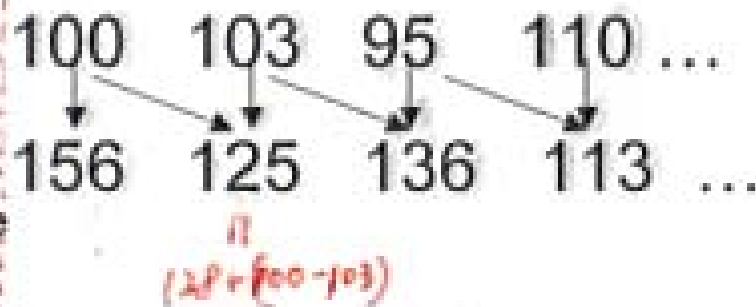
Embed

Transmit

Stego-image

Extract

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Previous Work - Embedding
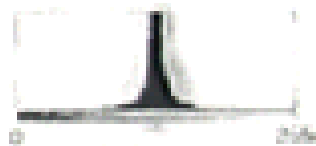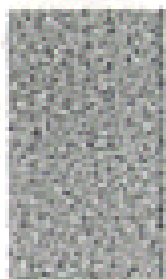
Cover diff. image

$128 + (100-103)$ #125

100 103 95 110 ...

125   113   ...

$128 + (95-110)$

size = 1/2 of cover image

100   103   95   110 ...
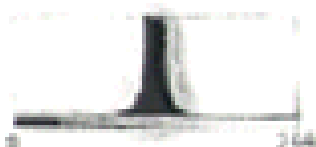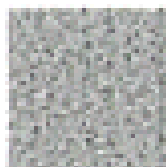
156 125 136 113 ...

$128 + (100-103)$
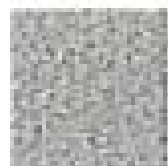
size = cover image

Previous Work – Adjust the cover diff. Image

Rang/table:
index | 1 | 2 | ··· | | n |
Non-uniform quantization

Example

	0~15	16~31	32~47	48~63	
index	1	2	3	4	...
No.cover diff.	32	63	110	239	...
No.secret diff.	35	55	115	235	...
Adjusted No. of cover diff.	35	55	115	239	...

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Previous Work – Replacement

Extra table
(index value of secret diff.):

RNG(79): *seed*

$\{$ 41, 59, 6, 17, 25, …, 113, 79, … $\}$ *location*
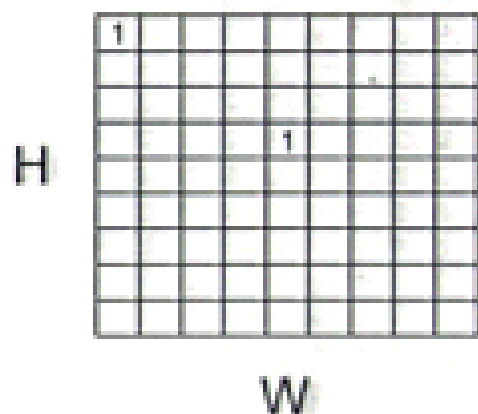
r_1 r_3 r_6 r_2 r_5 r_1 r_3

Adjusted cover diff. image

Secret diff. image
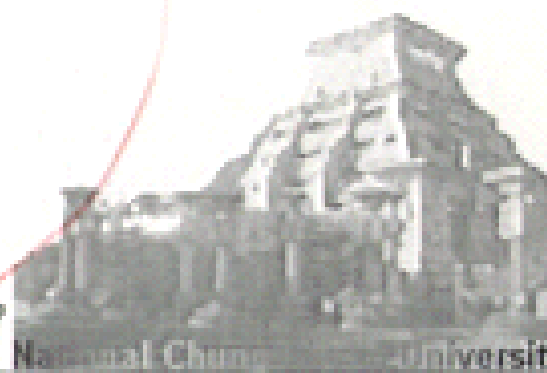
Previous Work – Size of the extra table

Extra table
(index value of secret diff.):

$Size = H \times W \times \log n,$
where n = number of ranges

Ex. $n=16$
$Size = H \times W \times 4$

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