ADAPTIVE CRYPTO-STEGANOSYSTEM FOR VIDEOS BASED ON INFORMATION CONTENT AND VISUAL PERCEPTION

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Prerana Mukherjee*, Siddharth Srivastava*, Brejesh Lall*,
Saisha Asolkar, Meera Pai****
*** Indian Institute of Technology, Delhi.**
**** National Institute of Technology, Goa**

OBJECTIVE

Development of a block based saliency driven ROBUST crypto-steganography scheme in videos for embedding encrypted secure data in an imperceptible and intractable manner.

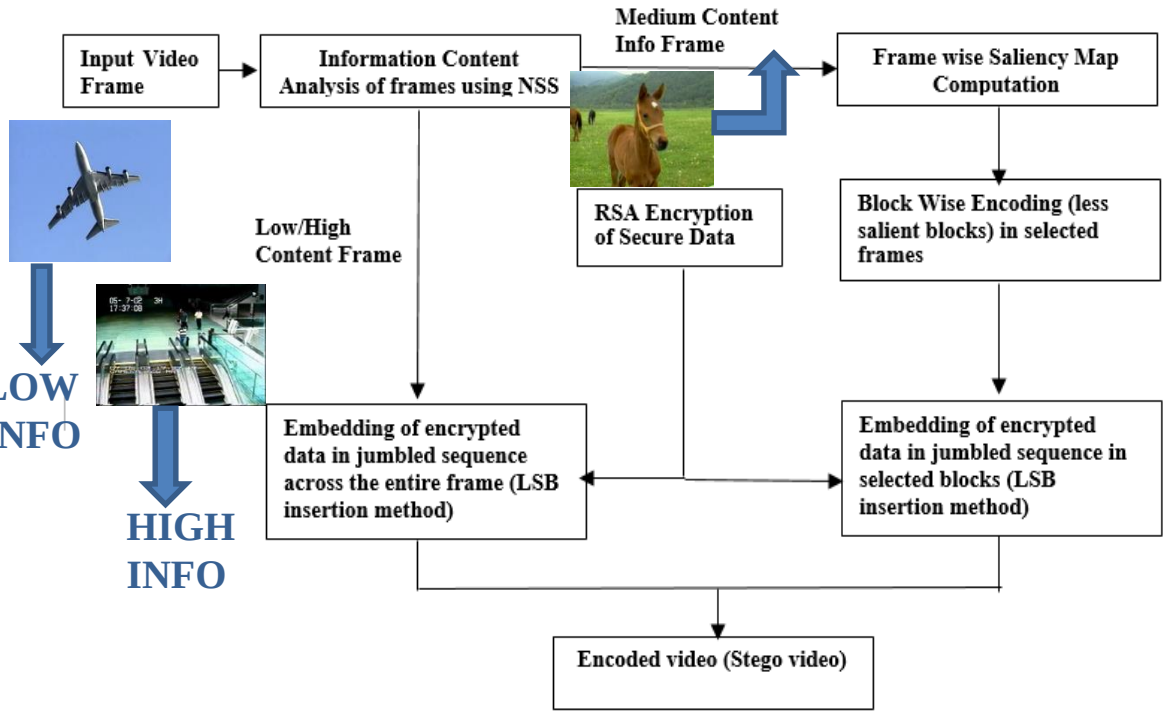
IMPORTANCE

- Low computational complexity.
- Perceptual Quality of videos not tampered.
- Sparse Embedding of data into frames.
- Less susceptible to statistical and saliency based attacks.
- Higher payload capacity.

APPLICATIONS

Covert Writing, Intelligence Services, Forensics, Digital Watermarking, Modern Printers

PROPOSED METHODOLOGY



RESULTS

Info Content	MSE	PSNR	CWSSIM	PH	FSIMc
LOW	0.0498	63.0981	0.9993	0.381944	0.9735
MEDIUM	0.00004	91.8219	0.9998	0.027778	0.9939
HIGH	0.00023	84	1.0000	0.022569	0.9992

Table 1. Performance measures on original vs encoded stego frame.

JSteg	StegHide	OpenPuff	F5	Ours
80.5 ± 4.2	51 ± 6.4	65.2 ± 1.6	78.5 ± 3.1	49 ± 7.8

Table 2. SVM Classification Performance using DCT features.

FUTURE SCOPE

- Further processing on stego-videos can be done to prevent loss of secret information due to compression if performed.
- To further improve intractability of information, transform domain models can be included.