Osama A. Khashan, Abdullah M. Zin, Elankovan A. Sundararajan, 2014. Performance study of selective encryption in comparison to full encryption for still visual images. *Journal of Zhejiang University-SCIENCE C (Computers & Electronics)*, **15**(6):435-444. [doi:10.1631/jzus.C1300262]

JZUS C (Comput. & Electron)

Performance study of selective encryption in comparison to full encryption for still visual images

Key words: Selective image encryption, Edge detection, Face detection

Corresponding author: Osama Khashan
E-mail: o_khashan@yahoo.com

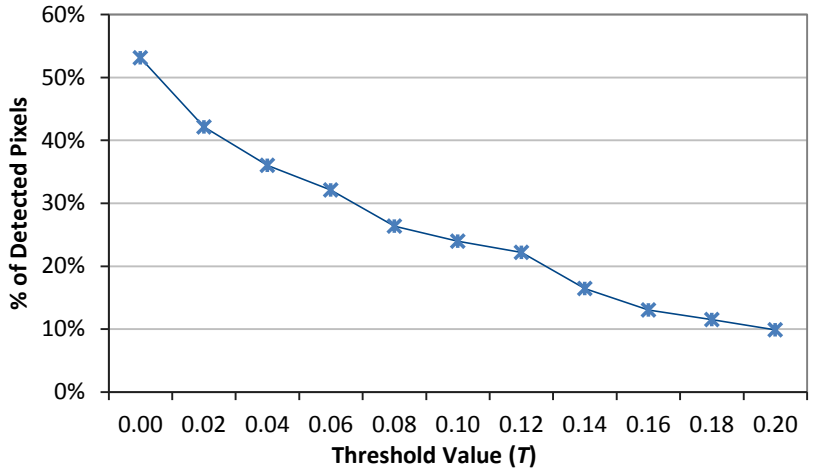
- The feasibility and performance of selective image encryption based on edge and face detection by using a symmetric cipher are studied and the results are compared with full encryption for still visual colour images.

- The different processes carried out during edge and face image encryption were analysed, and the computational time involved in each process was calculated.

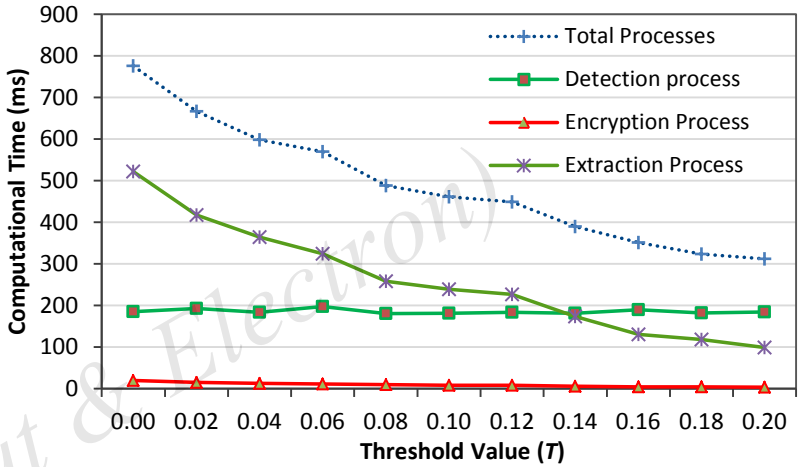
- The study reflects a significant reduction of computational time for selective encryption methods on still visual images compared to full encryption.

JZUS C (Comput & Electron)

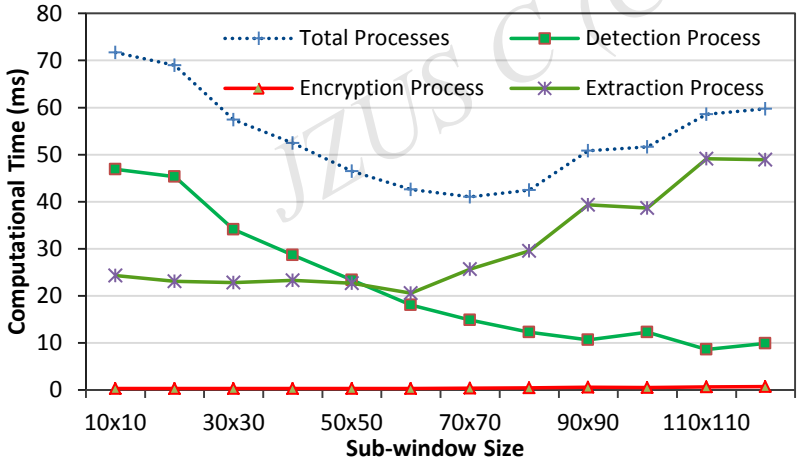
Major results



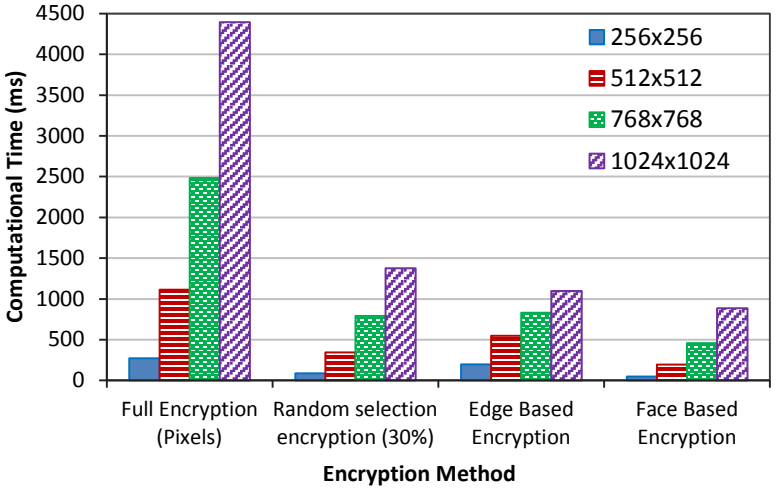
Correlation between changing *T* value and the percentage of the detected pixels for encrypting Lena of size 512×512



Computational times for the main processes executed during the edge-based encryption for Lena of size 512x512



Computational times for the main processes executed during the face-based encryption for Lena of size 256x256



Comparison of full visual Lena image encryption of various sizes vs. selective encryption methods

JZUS C (Comput & Electron)