

## ABSTRACT

The Study of Lossless Steganographic Techniques for Vector Quantized Indices

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A study of steganographic schemes is presented, along with new contributions to the field of information hiding. Steganographic schemes seek to hide a secret message within cover objects in such a way that the existence of any secret is also hidden. This ensures attackers cannot easily detect if the object contains a secret message. This thesis analyses the main lossless data hiding techniques in the compressed vector quantization (VQ) domain and describes three new techniques with comparable results. In this domain, compression and embedding are done using the VQ index table. The implemented schemes utilize various techniques such as the locally adaptive schema and joint neighboring coding. The goals of steganography in the compressed domain, are to embed large amounts of secret information, whilst simultaneously improving data compression. The three new techniques presented, were found to have higher embedding efficiencies than the previous works.

Keywords: Steganography; Information Hiding; Vector Quantization; Joint Neighboring Coding.