

# DEEP LEARNING BASED STEGANOGRAPHY MODEL TO IMPROVE PAYLOAD CAPACITY AND INVISIBILITY OF HIDDEN DATA

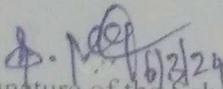
The rapid growth of online communication has increased the demand of secure communication. Most government entities, healthcare providers, the legal sector, financial and banking, and other industries are vulnerable in information security. Image steganography is one way to protect secure communication by hiding secret messages in the cover image. Steganography refers to hiding secret information inside some covers, and steganalysis refers to recovering the secret information. The data that can be hidden are either the texts or images. Hiding an image into another image means that the pixel values of the secret image will be embedded in another image called cover image. The challenge is that the cover image should not be damaged even if the embedding process changes the pixel values [2]. Steganography methods have various ways to embed a hidden secret message.

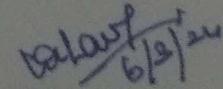
Cryptography encrypts a secret message by converting its plain text into cipher text, while the purpose of steganography is to secure the complete communication between the e-users. Hiding a large amount of secret information without raising the attacker's suspicion is the main challenge<sup>9</sup> in steganography. Hence a good steganography algorithm must satisfy the following three parameters such high payload, less visual discrepancy, high robustness. Payload refers to the amount of secret data hidden in the cover text [1], while less visual discrepancy means the hidden data which has not caused noticeable or visible distortions that the visual attackers can detect.

The proposed work is to develop a deep learning based on steganography algorithm to improve the payload capacity and reduce the visual discrepancy of the stego image. This can be done by finding the best deep learning algorithm to provide the best optimum location for hiding the secret bits in an image. To assess the quality and performance of the proposed work, the experimental results will be compared with existing state of the art works.

## Reference:

1. REEMA THABIT, NUR IZURA UDZIR, SHARIFAH MD YASIN, AZIAH ASMAWI, AND ADNAN ABDUL-AZIZ GUTUB (2022). "CSNTSteg: Color Spacing Normalization Text Steganography Model to Improve Capacity and Invisibility of Hidden Data", IEEE Access, June 2022, Digital Object Identifier 10.1109/ACCESS.2022.3182712.
2. R. R. Isnanto, R. Septiana and A. F. Hastawan, "Robustness of Steganography Image Method Using Dynamic Management Position of Least Significant Bit (LSB)," 2018 International Seminar on Research of Information Technology and Intelligent Systems (ISRITI), Yogyakarta, Indonesia, 2018, pp. 131-135, doi: 10.1109/ISRITI.2018.8864439.

  
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