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Study: (Morning)

Building a Data Hiding Model in The Image

A Graduate Project Submitted to the Department of Information Security of the College of Information Technology, University of Babylon, in Partial Fulfilment of the Requirements for the Bachelor's degree in Information Security of Information Technology.

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ABSTRACT

An era marked by relentless digital evolution, the imperative to safeguard sensitive information has intensified, prompting the need for innovative solutions to counter an ever-expanding array of emerging threats. This study meticulously concentrates on pioneering a cutting-edge approach to data concealment, leveraging the Least Significant Bit (LSB) technique to elevate the standards of data protection.

Addressing the complex challenges associated with information security and the escalating risk of breaches, this research strives to enhance methods of covert information embedding. The overarching goal is to ensure data confidentiality while effectively mitigating the pervasive threats linked to contemporary espionage techniques. The proposed model not only navigates the intricate landscape of data concealment but also prioritizes the preservation of visual integrity within images.

A comprehensive evaluation is conducted across diverse metrics, including imperceptibility, robustness, and data hiding capacity, effectively substantiating the model's potential for secure data concealment applications. This research represents a substantial stride in the field of steganography, responding adeptly to the critical need for advanced data protection methodologies in the dynamic and relentless digital era. The model, underpinned by the versatile LSB technique, introduces a secure and adaptable means of concealing various data types within images. Consequently, it significantly contributes to the ongoing pursuit of information confidentiality and integrity, marking a noteworthy advancement in the realm of secure data concealmen