PREFACE

All praise is due to Allah SWT for His grace and blessings, enabling the author to complete this thesis titled **"LSB-Based Robust Image Watermarking Using Turtle-Scheme on Neighborhood Pixel."** May peace and blessings be upon the Prophet Muhammad SAW, his family, companions, and all his followers. Aamiin.

The rapid development of digital technology today demands robust *watermarking* methods to protect image data against various types of attacks. This thesis proposes an *LSB (Least Significant Bit)-based image watermarking* method with modifications to the *Turtle Shell Scheme*. This approach aims to enhance the resilience of watermarks against common attacks, such as noise and image compression.

The author hopes that this research can contribute to the development of stronger and more efficient watermarking techniques. However, the author acknowledges that this research is still at an early stage, leaving ample opportunity for further exploration and enhancement by future researchers.

The author is also aware that there may be unintended errors or shortcomings in this thesis. Therefore, constructive feedback and suggestions from readers are highly appreciated to improve the quality of this work.

In conclusion, it is the author's hope that this thesis will provide benefits to those interested in deepening their knowledge of *watermarking* techniques and the *Turtle Shell Scheme* modifications. It is also hoped that this research will serve as a useful reference for the advancement of knowledge in this field.

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