PREFACE

Praise and gratitude to Allah SWT for all His mercy, grace, and ease so that the author can complete the preparation of a thesis book entitled **"Federated Learning Approaches for IoT Intrusion Detection Based on FedAvg and FedProx on IID and Non-IID Data"** well. The writing of this book is one of the requirements for completing the master's degree in electrical engineering at Telkom University.

This book was prepared as an academic contribution to the fields of cybersecurity and distributed machine learning, particularly in the development of a Federated Learning-based Collaborative Intrusion Detection System. During the process of preparing this book, the author gained extensive knowledge, encountered numerous challenges, and gained valuable experiences that enriched their insights both theoretically and practically.

The author realizes that this book still has shortcomings. Therefore, constructive criticism and suggestions are highly expected by the author for future improvements. Hopefully, this thesis book can provide benefits and serve as a useful reference for the development of science, particularly in the fields of Federated Learning and IoT network security.

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