

ACKNOWLEDGEMENTS

I praise God - for his generosity, mercy, and bounty - who provided me the health, strength, and patience, guiding me through all the difficulties to start and then complete this work. I would never be able to finish it without the will of God I want to express my deepest gratitude and thanks to:

1. I would like to express my gratitude to my supervisor, Prof. Ari M. Bermawi, Ph.D., for his unwavering support, kindness, and belief in me throughout this thesis research. She provided invaluable advice not only on the research process but also on my journey to rediscover how to learn.
2. Thank you to Professor Hyoung Joong Kim from Korea University for guiding me from afar, always showing patience, and offering support despite his busy schedule and the significant time difference.
3. I appreciate the chairperson of the jury and the jury members for their insightful comments and suggestions that enhanced this thesis.
4. Thank you to all the faculty and staff of the Master Graduate Program at Telkom University for their assistance, guidance, and support.
5. I am grateful to my beloved parents for their unwavering support, endless love, and trust in me throughout my thesis writing journey.
6. A heartfelt thank you to my fellow data security students, Faidhil, Hanang, and Nabila, for our discussions and the motivation they provided to keep me engaged in my studies.
7. I extend my appreciation to my supervisors and colleagues at the Directorate of Technology Information at Telkom University