ACKNOWLEDGEMENTS

I praise Allah (SWT) - 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 Allah (SWT). I want to express my deepest gratitude and thanks to:

- 1. My supervisor, Prof. Ari M. Barmawi, Ph. D., for giving me support, kindness, and faith to finish this thesis research. Who tirelessly give me valuable advice not only for the research process but also on my journey to re-learn the process of learning.
- 2. Chairperson of the jury, and jury members. for their comments and suggestions for this thesis enhancement.
- 3. All Master Graduate Program of Telkom University lectures and staff for the help, assistance, and guidance.
- 4. My beloved father and mother, Father Ahmad Masdar and Mother Hasniati Latief, and my younger sibling Fadhillah Azzahrah for their support, endless love, and for their trust in me on my journey in writing this thesis.
- 5. Other data security student colleagues, Ara, Hanang, and Nabila, for all the discussion and support to keep me motivated in this study.
- 6. My supervisors and colleagues at the Directorate of Technology Information at Telkom University.
- For all my beloveds and those I could not mention in this thesis, may Allah (SWT) bless you and grant you health, happiness, and success in this world and the hereafter