

ACKNOWLEDGEMENTS

I would like to express my sincere gratitude to my supervisor Hertog Nugroho, Ph.D for his support and guidance. His patience, motivation, and continuous encouragement really help me to overcome the difficult times in finishing this research. I also thank all the lecturers of Telkom University who shared their immense knowledge, all the staff who provided technical training and access to necessary resources needed in this research completion, and all friends who shared their opinions and ideas in countless discussion happened in residency.

Finally, I would express my deepest gratitude to my parents who always prayed for me and gave their best support until this very moment.

Best regard!

Trisna Gelar Abdillah