ACKNOWLEDGEMENT

Bismillahirrahmanirrahim,

Assalamu'alaikum Warahmatullahi Wabarakatuh,

All praise and gratitude to Allah SWT, the Lord of the universe, for all the abundance of grace, the favor of faith, the favor of health, and the opportunity so that the author can complete the writing of this thesis as one of the requirements for obtaining a Master's degree in Electrical Engineering at the Faculty of Electrical Engineering, Telkom University.

In the process of preparing this thesis, the author is fully aware that many parties have provided invaluable support, assistance, guidance, motivation, and prayers. Therefore, with all humility, the author would like to express his deepest gratitude to:

- 1. **Allah SWT**, for all the ease, smoothness, strength, and guidance given during the course of study and completion of this thesis.
- 2. **Prophet Muhammad SAW**, as a source of inspiration and a guide to life that brings mercy to all nature.
- 3. My beloved father **Alfridsyah** and mother **Emi Yoesvita**, for all the endless outpouring of love, unlimited moral and material support, prayers that always accompany every step, as well as extraordinary patience and understanding in providing enthusiasm and motivation to the author.
- 4. The author's extended family: Brother **Baginda Ilham Alfridsyah**, My Little Brother **Baginda Muhammad Bintang Alfridsyah**, My Little Brother **Baginda Sheikh Multazam Alfridsyah**, and Sister-in-Law **Salwa Hanum**, thank you for your support, joy, prayers, and understanding that helped encourage the preparation of this thesis.
- 5. **Prof. Dr. Achmad Rizal, S.T., M.T.**, as the first supervisor. Sincere gratitude for his patience, time, valuable guidance, clear directions, enlightening discussions, and full support not only in the preparation of this thesis, but also during the author's Master by Research program.

6. **Dr. Tito Waluyo Purboyo S. Si., S.T., M.PMat.**, as Supervisor II. Thank you for your time, constructive input, suggestions for improvement, and discussions that have helped direct the research and writing of this thesis.

7. The entire academic community of the Electrical Engineering Masters Study Program and the Faculty of Electrical Engineering, Telkom University, especially **Mrs. Gia** and **Mr. Insan**, for all assistance, information, and convenience in various academic and administrative matters during the author's study period.

8. **Rida Aisyah Taufikiyah**, thank you for being a friend to share stories, a good listener, and for the moral support and encouragement given during the preparation of this thesis.

The author realizes that this thesis is far from perfection. Therefore, constructive criticism and suggestions from the readers will be gladly received by the author for future improvements.

Finally, I hope this thesis can provide benefits, no matter how small, for the development of science, especially in the field of Electrical Engineering.

Wassalamu'alaikum Warahmatullahi Wabarakatuh.

Bandung, 20 June 2025

Baginda Mi'raj Williamsyah