

## DEDICATION

This thesis is compiled with the support of my family. I praise GOD and thanks to all who have helped, directed, and supported this work. I dedicate the work to my beloved parents Lia Herliyanti and Kiki Sudiana, also Fitrah Syafira that has to be the number one support system.

Finally this thesis is dedicated to all informatics students in the world. I hope that this research may provide valuable contribution in Computer Science.

## ACKNOWLEDGMENTS

This thesis is compiled with the effort, help, and support from both students and lecturers. I would like to express my deepest gratitude and thanks to:

1. My family and parents, who have always provided prayers, moral, and material support. They have been my primary motivators in pursuing higher education and have been instrumental in helping me complete this thesis.
2. Mr. Dr. Erwin Budi Setiawan, S.Si., M.Sc., my first supervisor, for the time and dedication he has devoted to guiding me throughout the completion of this thesis.
3. All my peers in the S2 Informatics 2021 cohort, who have journeyed with me from the start to the end of our lectures.