

PREFACE

First and foremost, I express my deepest gratitude to God for His blessings and guidance, which have enabled me to complete this final thesis, titled "**Clustering Nutritional Status in Java Island, Indonesia Using Gaussian Mixture Models with Model-Based Hierarchical Initialization**".

I want to extend my heartfelt gratitude to the following individuals for their significant contributions to this thesis:

1. Mr. Prof. Dr. Drs. Tarno, M.Si., the Head of the Department of Statistics, for his unwavering support and encouragement throughout my academic journey.
2. Mr. Dr. Moch. Abdul Mukid, S.Si., M.Si., my thesis supervisor, for his valuable insights, guidance, and constructive feedback during the research and writing process.
3. Mrs. Masithoh Yessi Rochayani, S.Si., M.Stat., my co-supervisor, for her advice, patience, and constant motivation, which were instrumental in the completion of this thesis.
4. Hilmi, Nabila, and Anita, for their constant presence, encouragement, and companionship during this process. Their support and motivation helped me stay focused and resilient throughout the creation of this thesis.

Lastly, I thank my family and friends for their unwavering support throughout this journey.

Semarang, 24 Juni 2025



Mirwanto Paulima Adveliften Sidabutar