## **ACKNOWLEDGEMENT**

First and foremost, I'd like to thank my brain for constantly trying to get me to do things unrelated to the thesis in order to avoid the stress of writing paper, even though that it is far too much, as well as my hands and arms for always being by my side, even so, they are not always in sync with my brain. My legs for always stand for me even sometime want to lie down on the floor after several rejections from journals, and my heart for never tired of hearing feedback from Journal reviewers. I'd like to thank Assist Professor Dr. Sajjakaj JomnonKwao for his advice and guidance throughout the research process. I'm also thankful to Professor Dr. Vatanavong Ratanavaraha for advising me on how to publish a paper in a prestigious journal. Furthermore, I'd like to express my appreciation to all professors who teaches me with my coursework including random Indian programmers who created the tutorial VDO on YouTube for coding and Machine learning issue related until I was able to successfully complete my research. Finally, I'd like to thank all my colleagues in the Energy and Logistics Management Engineering program, Mechanical Engineering School, as well as my family members, for their constant encouragement and support.

Ittirit Mohamad