ACKNOWLEDGEMENT

I express my sincere gratitude to our beloved Vice-Chancellor, Registrar and Research Coordinator, Manonmaniam Sundaranar University, Tirunelveli for permitting me to carry out this research work.

I express my deep sense of gratitude and thanks to my research supervisor Dr.D.Murugan, Associate Professor, Computer Science and Engineering, Manonmaniam Sundaranar University Tirunelveli for his valuable guidance, stimulating encouragement, increasing enthusiasm, the sparkling discussions and the thorough explanation he gave me for the successful completion of this research work.

I sincerely thank Dr.R.S.Rajesh, Professor and Head, Department of Computer Science and Engineering, Manonmaniam Sundaranar University, Tirunelveli for permitting me to utilize the Lab facilities available in the Department and timely discussions.

I whole heartedly thank Dr.A.Suruliandi, Professor, Department of Computer Science and Engineering, Manonmaniam Sundaranar University, Tirunelveli for his timely discussions and explanations about performance metrics and cleared my doubts throughout the process of this research work.

I whole heartedly thank Dr.R.Balasubramanian, Professor, Department of Computer Science and Engineering, Manonmaniam Sundaranar University, Tirunelveli for his advice and moral support.

I extend my thanks to all my friends, teaching and non-teaching staff members of the Department of Computer Science and Engineering, Manonmaniam Sundaranar University for their encouragement.

My Special thanks to Dr. Rajalakshmi K for timely discussions and explanations regarding the research work and Mr.T.Ganesh Kumar, Research Scholar, Department of Computer Science & Engineering, Manonmaniam Sundaranar University, Tirunelveli for his sincere and timely help for compiling my thesis and assistance in entire research work.

The images for research are taken from SOHO/MDI consortium. SOHO is a project of international cooperation between ESA and NASA. Images are also taken
from NASA/SDO and the AIA, EVE, and HMI science teams. The sunspot numbers recorded are taken from Monthly Sunspot number by Bureau of Meteorology, Australian Government, National Geophysical Data Center of US National Oceanic & Atmospheric Administration and Sunspot SILSO in Solar Influences Data Analysis Center.

Most important of all, I owe my loving thanks to my parents, family members, brother, wife and son, who was patiently bearing with understanding my pressure, their encouragements, sacrifice, continuous help and moral support which helped a lot for my work and also I remember the loving memory of eldest brother Anish T I.

Last but not the least, I thank ALMIGHTY for showering all the blessings, keeping me in good health and sprits to complete this research work to my at most satisfaction.

Manish T I