ACKNOWLEDGEMENTS

The work on this thesis has been an inspiring, often exciting, sometimes challenging, nevertheless always interesting experience. I would like to thank many people for their estimable contribution in the present work.

I am greatly indebted to my supervisor, Dr. P. N. Sen, Department of Atmospheric and Space Sciences (DASS), University of Pune (UoP) for his guidance through the course of work.

I also would like to express my profound gratefulness to my co-guide Dr. M. M. Ali, National Remote Sensing Agency (NRSA), Hyderabad for bringing me this far in my research career. He went beyond the call of duty on my behalf often. His enduring guidance and outstanding advice opened my eyes how to do science. His door was open for the discussion all the time when I needed despite a pressing time schedule. His comments and constructive criticism greatly enhanced this thesis. This work would not be possible without the unique perspective and courage he brought in me. I thank him with undying respect and admiration for he has truly been the brightest light in my research career. I still need his perpetuation.

I am obligated to Dr. Pradeep Kumar, Head, DASS, UoP for providing me all the facilities for the present work. I cannot forget his help in fulfilling the administrative formalities without which timely submission of the thesis would not have been possible. Further word of thanks goes to the Vice – Chancellor, the Registrar and other concerned officials of UoP, Pune for their extended cooperation.

I am also thankful to and want to show my gratitude towards Dr. K. Radhakrishnan, Director, NRSA and Dr. G. H. Behra, NRSA that I always had all the needed facilities available at my disposal. It really helped in uninterrupted execution and completion of this work. I also would like to express my deep sense of gratitude to Dr. P. S. Roy, NRSA, for his encouragement during the course of work. My warm thanks go to all the scientists of Oceanography Division, NRSA for the moral support they provided me and always encouraged me.
I take this opportunity to express my gratitude to Dr. Radhika Ramachandran, Officer on Special Duty, Department of Space, New Delhi for her very thoughtful comments and suggestions. I am very much thankful to “Department of Ocean Development” and “Council of Scientific and Industrial Research” for providing me the fellowships during the course of this work.

I am also thankful to Prof. R. A. Weller, Physical Oceanography Department, Woods Hole Oceanographic Institution (WHOI), Woods Hole, Massachusetts, USA for generously providing the WHOI mooring data and clarifying many doubts during the course of the work. I have furthermore to thank Dr. Ramesh Babu, National Institute of Oceanography, Goa, for providing the Arabian Sea Monsoon Experiment data. My special thank goes to National Oceanographic Data Center (NODC) for providing the climatological data.

My most sincere gratitude goes to my dear friend Mr. Debadatta Swain for encouraging and helping me in one way or another to pursue my research. I thank him for introducing me to neural network technique and providing and indicating me useful material sources.

No words of thank could describe my debt to my lovely parents and family for their moral support, although miles away. They were a pillar of strength, moral and hope. Their blessings are always with me. Their love and affection helped me to go through this long and time taking journey.

Last but not the least, I thank my husband from the bottom of my heart for reviving my inner strength whenever I was feeling like giving up on the enormous pressure from different sides. His love and conviction helped me in being optimistic about this work.

I thank each and every one who helped me directly or indirectly in successful completion of this work.

To you all, Thank you!