Acknowledgements

First and foremost, I would like to express my sincere regards and gratitude to my Ph.D. supervisor Prof. V.K. Thakar, Head, Department of ECE, A.D. Patel Institute of Technology, for his invaluable inspiration, expert guidance, wholehearted cooperation, moral support, incessant encouragement and appreciation, which culminated in the successful completion of this research work. His dedication towards work, method of problem solving, and helping nature has inspired me and will continue to inspire me for the rest of my career.

I would like to extend my sincere regards and thanks to my former Ph. D. guide Prof. K.V. Kotecha, Director, Nirma Institute of Technology, Ahmedabad, for his motivation, wholehearted cooperation, and kind support. His priceless inspiration had given a good start-up to this research work. I owe my deepest gratitude to Dr. Narendra C. Chauhan for providing me an excellent guidance, suggestions and comments to carry out this research in lucid manner. His continuous support and invaluable suggestions have improved quality of research work and the thesis.

I would like to express my deep sense of gratitude to Dr. V.S. Patel, Honerable Director, SICART for providing me work space and necessary resources to carry out this research. It is an honor for me to express my deep sense of gratitude to Dr. C. L. Patel, Chairman, Charutar Viday Mandal for giving permission to
pursue in-service Ph.D. I am extremely thankful to Dr. R. K. Jain, Principal, ADIT for his kind support, continuous inspiration and for providing necessary resources during the research work.

I am grateful to Prof. Apurva Shah, Head, Department of Information Technology, GCET for his invaluable suggestions and guidance. My very special thanks goes to Prof. Sanjay Garg, Prof. Sudhir Vegad, Prof. Sanjay Bhandari for their kind support during my research work. It is a pleasure to thank my colleagues and non-teaching staff of computer engineering and information technology department, who have directly or indirectly helped me during the research work.

I extend my heartfelt gratitude to my parents, for their love, consistent support and patience. My sincere heartiest special thanks to my loving wife Daxa for her patience, understanding and unflinching support. Without her support, completion of this thesis within the stipulated time would have been impossible. I am short of words, to express my loving gratitude to my loving son, Harsh, for his innocent smiles which inspired me during the entire work.

At last, I owe everything to the Almighty and my Guru who give me continuous encouragement not only during the research work but throughout my life.

Ramji M. Makwana