

# Acknowledgement

At this important stage of my life first of all I would like to say,

I thank the All mighty God for keeping me surrounded by such good people to make this thesis happen. This work is a result of constant encouragement of my mother Komalam, my younger brother Mithun for his inspiring words and all my teachers. My mother taught me the value of education. She supported me by sharing household and social responsibilities. I am thankful to all members around me for extending their support in my department. My daughter Pia's support made me fresh whenever I was depressed. This work took lot of efforts and my mother extended all possible support. I am thankful to her.

I dedicate my thesis to my former guide Prof D.C. Vakaskar Sir who left for his heavenly departure and left behind a huge loss which is beyond imagination. I am grateful to his continuous encouragement and trust in me which helped me in my research. His knowledge and guidance is always remembered.

I thank my guide Dr. B.M. Shah Sir for his support in my work at the most crucial stage of research. He helped me in understanding the core concepts of wavelets. I am grateful to get a chance to work under him. I thank him for the time spent on broadening my knowledge on wavelets during valuable discussions.

I thank Prof V. D. Pathak Sir for his valuable suggestions and time spent on details to clear my concepts on numerical approaches and analysis. He inspired me to move further at difficult junctures. His regular feedbacks and trust in the study motivated me to move on with difficult stages during the research.

I am fortunate to have teachers like my former guide Prof D. C. Vakaskar Sir, Prof V. D. Pathak Sir and Dr. B. M. Shah who taught me details of wavelet theory, multi resolution. I am thankful to Dr.P.S. Kantawala Madam, Dr. Dhanesh Patel Sir, Dr. B. M. Shah, Dr. Purnima Madam, Dr. Jaita Madam and Dr. Trupti Madam. All

were very supportive. I am thankful to all of them.

I am also thankful to Dr. Rajesh Shah Sir, Dr. Snehal Sir, Amar, Yash, Charmi, who helped me one way or the other. I am thankful to Madhuri, Pooja and Sapna for inspiring me during my hard times.

I thank Mrs Rajeshri Vakaskar Madam for her blessings. Mrs Shubhangi Pathak Madam for her support and warmth during my tough times to stand by me when ever I was in need.

I am lucky to have research oriented friends. My sincere thanks to them for providing all possible support, giving me strength and being continuous source of inspiration.

I thank Head, Department of Applied Mathematics for allowing me to use the resources for reference. I extend my thanks to the department of Applied Mathematics for providing resources to carry out research work.

K. P. Mredula