Acknowledgments

This thesis owes its existence to the help, support, and inspiration of many people whose contribution in assorted ways to the research and the making of the thesis deserves special mention. It is a pleasure to convey my gratitude to them all in my humble acknowledgment.

In the first place I would like to record my gratitude to Prof. R. Murugesan for his supervision, advice, and guidance from the very early stage of this research as well as giving me extraordinary experiences throughout the work. His uncompromising quest for excellence has significantly shaped me in pursuing this research. His involvement with his originality has triggered and nourished my intellectual maturity that I will benefit from, for a long time to come. In addition, he has always been accessible and willing to help me with my research. Above all and the most needed, he provided me unflinching encouragement and support in various ways. As a result, research life became smooth and rewarding for me. I am indebted to him more than he knows.

I am also indebted to my co-guide Prof. R. Bhaskaran for his suggestions and constructive support over the years.

I would like to thank the Vice-Chancellor and Registrar, Madurai Kamaraj University, Madurai for kindly allowing me to utilize the resources available in the institution during the years of my research work. I am glad to thank the Head, Computer Center, Madurai Kamaraj University, Madurai for providing laboratory facilities during the research work.

I am greatly indebted to Dr. T. Chinnaraj Joseph Jaikumar, Principal and Secretary, The American College for graciously allowing me to carry out this research work. I acknowledge Dr. Sr. Ignatius Mary, Former Principal, Fatima College for her encouragement and support during the early stages of this research.

I also extend my sincere thanks to my colleagues Mrs. J. Radhiya, Ms. M. B. C. Asha Vani, Mrs. M. Girija and Ms. S. Bharathavarthini for their assistance and support. I am glad to thank Mr. Pasumpon for his timely help during my thesis writing.
The discussions and cooperations with the members of the medical image processing research team have contributed substantially to this work. I am grateful to Dr. D. Christopher Durairaj, Dr. P. Alli, Mr. S. Sivakumar, Dr. T. Aravalluwan, Dr. S. Chandrasekaran, Mr. D. Balasubramanian, Mrs. M. Sumathi, Mrs. V. Thavavel and Mrs. C. Saritha for the cooperative spirit and the excellent working atmosphere, creating a unique setting for intellectual explorations. I also wish to express my gratitude to Mr. K. Venkatesan, Mr. Bibbin Tom Paul, Mr. M. S. Pandian, Mr. B. Anish and Ms. S. Swathika for their kind support. I am very grateful to Mrs. Selvameena Murugesan for her continuous and unconditional support.

I owe my deepest gratitude to my family. I would like to thank my father, Mr. M. K. Mathana Gopal Raja, who taught me the value of hard work by setting himself as an example. It is to him that this thesis is dedicated. I am grateful to my husband, Mr. S. A. Ram Murali, for the moral support he provided throughout my research work. I would like to thank my mother Mrs. M. M. Padma and mother-in-law, Mrs. S. A. Kalyani for their constant source of support. Particularly, I owe to my daughters Akshara and Madhumitha for their silent prayer for my work, at the time when they needed my company most. I would like to share this happiness with Vinoth, Durga and Santhosh.

Finally, I would like to thank all whose direct and indirect support helped me completing my thesis in time.

M. M. Ramya