ACKNOWLEDGEMENTS

First and foremost, praises and thanks to the God my Father, the Creator and the Guardian, for His showers of blessings throughout my research work.

This research is deficient if I do not place on record my most profound feeling of appreciation to every one of the individuals who stimulated, steered and upheld me throughout, to take up and conduct this research work.

I express profound obligation of gratitude to my research supervisor and guide Dr. G. Sadashivappa for his invaluable guidance all through my research. His experience, patience, tender consolation and ceaseless direction have enlivened me a considerable measure. His transparency of thought, sharp examination and taste for flawlessness are assets that merit being imitated.

I keep on record my sincere thanks to Dr. Fr. Thomas C. Mathew, Vice Chancellor, Christ University, Dr. Fr. Abraham V. M., Pro Vice Chancellor, Christ University, Dr. Anil Pinto, Registrar, Dr. Fr. Varghese K. J, Chief Finance Officer and the entire management of Christ University for their support and encouragement. I extend my thanks to Dr. Fr. Jossy P. George, Director CIM, Dasve Lavasa, Dr. George Thomas C., Associate Dean, Deanery of Science, and Prof. Joy Paulose, HoD, Department of Computer Science, Christ University for their moral support. I thank Dr. Tony Sam George, Additional Director, Dr. Shivappa B. Gudennavar and Dr. Sebastian K. A., Associate Directors, Centre for Research, Christ University, for their guidance and support. A profound gratitude to Dr. Srikanta Swamy, Former Additional Director, Centre for Research, Christ University, for his concern, care and moral support. I thank the Librarian, Christ University, for the help and support rendered to use valuable knowledge resources.
A special mention of gratefulness towards Dr. Kunjomana A. G., Professor, Department of Physics and Electronics, Christ University for her significant recommendations, inviting prompts and friendly advises. I thank all the faculty members of Department of Computer Science and my colleagues and friends in Christ University for their whole hearted support.

A heartfelt word of thanks from the bottom of my heart to my friend and colleague Prof. Vijayalakshmi A., who helped me stay sane through these difficult years. Her support and inspiration helped me overcome setbacks and stay focused on my research work. I greatly value her friendship and I deeply appreciate her belief in me.

Above all, none of this would have been conceivable without the affection and persistence of my family. My family has been a consistent wellspring of affection, concern and support all these years. I thank my dearest father Late Mr. Jose Mathew and my mom Mrs. Annamma Jose, who shaped me in my scholarly interest. Their infallible love and support has always been my strength. I owe my most profound appreciation and affection towards my better half Mr. Tomy P. Joseph and my little girl Joann P. Tomy for their endless backing and understanding of my goals and aspirations. A special thanks to my sister Mrs Jayamol Prakash and my brother in law Mr. Prakash Issac for their support and affection.

Finally, my sincere acknowledgements to all who directly or indirectly helped me in my research.

Ms. Deepa V. Jose