

Acknowledgements

"I am indebted to my father for living, but to my teacher for living well "

- Alexander of Macedon

"Ideal teachers are those who use themselves as bridges over which they invite their students to cross, then having facilitated their crossing, joyfully collapse, encouraging them to create bridges of their own "

-- Nikos Kazantzakis

It is my immense pleasure and privilege to express my deep sense of gratitude and sincere thanks to my beloved mentor, guide and supervisor Dr B H Shekar who motivated and inspired me to think about research through exploration of new thoughts. He was very friendly and readily accessible whenever I need to discuss the issues related to my research work. His smiling face, caring words, encouraging attitude, way of interpreting the problems in various dimensions and providing the way to reach solutions inspired me to work hard to achieve something memorable in life. He is the person who proved that a good friend can also be a great teacher/guide. His motivation and eagerness to instill the knowledge and untiring efforts made me to reach the desired goal of doctoral work.

My sincere and heartfelt gratitude to Dr P. Nagabhushan, Professor and Director, Planning, Monitoring and Evaluation, University of Mysore, Mysore for his motivation, support and concern. I express my sincere gratitude to Dr G Hemanth Kumar, Professor and Chairman, Department of Studies in Computer Science, University of Mysore for his kind hearted support and encouragement. I am grateful to Dr D S Guru, Associate Professor, Department of Studies in Computer Science, University of Mysore for his motivation, support and wishes. I am very much indebted to Dr H S Nagendra swamy, Associate Professor, Department of Studies in Computer Science, University of Mysore, for his constant help, motivation and support. I wish to express my sincere gratitude to Dr Nagappa U Bhajantri, Professor, Government Engineering College, Chamarajanagara

and Dr H S Rameshbabu, Professor and HOD, Acharya Institute of Technology, Bangalore for their encouragement, help and support during the process of research

I express my gratitude to Dr P Shivakumara, School of Computing, National University of Singapore for his motivation, support and valuable suggestions

I would like to thank the Office bearers and trustees of Sri Krishnadevaraya Educational Trust for their whole hearted support during my research period I would like to express my sincere thanks to Dr Viresh K Basalalli, Director, Prof R H Nagabhushan, Dean, Prof Dilip K Sen, Head of the Department of Computer Science & Engineering, and Dr M S Indra Principal, Sir M Visvesvaraya Institute of Technology, for their help, support and cooperation to carry out my research work successfully

I thank Dr Doreswamy, Chairman Board of Studies, Dr Manjiah D H, and Dr H L Shashirekha, Associate Professors of Post Graduate Department of Computer Science, Mangalore University for their support and encouragement I also thank teaching and non-teaching staff of the Department of Computer Science, Mangalore University

I wish to express my sincere gratitude to Dr K S Deshikachar who inspired me to continue in teaching The moral support, encouragement and parental affection of Dr D S Ramakrishna, Former Principal, APS College of Engineering, and Sri S K Poojary, DGM, Bank of Baroda, Bangalore are highly rememberable

I cannot express in words the help and services rendered by my friends and research colleagues Mr Raghurama Holla, Mrs Sharmila Kumari, Mrs Bharathi, Mr Hemanth, Mr Harivinod, Mr Srinivasa Narasegowda, Mr Nagaraja and all others who made to feel comfortable during my research period

I would like to thank, Dr Vidyavathi, Mrs Sheela Kathavate, Dr S K Uma, Dr Bhanuprakash, Mrs Sumaswamy, Mr Kubera, Mr Ravish and all my colleagues and friends of Sir M Visvesvaraya Institute of Technology for their constant support

I cannot forget the hospitality and affection showered on me by the family members of my supervisor I could feel the concern of sister Mrs Geetha Shekar, Chi Pooja Shekar

and Chi Varsha Shekar Especially, Chi Varsha Shekar used to be very friendly with this uncle that I used to forget all my worries and the feeling of away from home I thank all the family members of my supervisor especially Sri Basavegowda and Smt Parvathamma for their support and parental concern

Behind the success of every man there is a woman I am happy and proud enough to express that my success is due to my wife Dr Latha Her love, care, concern, prayer, wishes and moral support made me to think big in life and achieve it I cannot compare the pleasure, joy and the happiness experience with my children Chi Tanmay and Chi Chinmay They made to forget all my work pressure, tension and tiredness through their sweet and innocent words

Friends have made me rich by giving me the gift of hope, by being there when I needed them and by giving me a shove in the right direction when I hesitated It is my pleasure to express heartfelt thanks to all my friends Dr T G Basavaraju, Prof. Jayadev, Mr S E Ashoka, Mr Prabhakar, Mr H S Rajashekhar, Mr G P Mahesh, Mr G K. Ravi Kumar, Mr Manjunath, Mr N P Krishnamurthy, Mr C Krishnamurthy, Mr M R Basavaraju and elders who helped me directly and indirectly to complete my research work

I remember the moral support of my research friends of University of Mysore, Dr B S Harish, Mr K B Nagasundara, Mr Manjunatha, Mr P B Mallikarjuna, Mr Sharath and Mr Imran

My parents Smt Leelavathi and late Sri Gangappa, brought me to this world and made me to feel and experience all the happiness which surrounds the world They stood always behind my success in every endeavor I am lucky to have such great parents who sacrificed their comforts for my future I am very much grateful to my in-laws Sri Nagaraja B H and Smt Hemavathi Nagaraja for their support, love, affection and services rendered to me in all aspects to complete my research work

I thank the administrative authorities of Mangalore University for having permitted me to work towards my doctoral degree I would like to extend my heartfelt thanks to Mr Lingaraju, Mrs Sharmila and Mr Bhoja for their support and help

I also remember the moral support and services of my brothers, sister, brother-in-law and kids of my brother and sister

I am extending my heartfelt thanks to Dr Boja Poojary, Mangalore University, Prof P S Hiremath, Gulbarga University, Dr T V Vasudev and Dr Murali MIT, Mysore, Dr B S Anam, K L E Institute of Technology, Hubli, and Dr B V Dhandra Gulbarga University for their wishes

It will be endless to list each and every friend, relative and well wisher of mine who have directly or indirectly wished for my success in all endeavors I thank one and all