Acknowledgements

It’s a matter of great pride for me to gratify plentiful local and global ‘associates’, who have contributed in one or the other forms towards carving of this thesis.

At this moment of big accomplishment, I express my sincere thanks to my research supervisor cum mentor, Prof. B. V. Pawar, who is also the Director, School of Computer Science and Ex-Dean, Faculty of Science, North Maharashtra University, Jalgaon (MS), India, for sowing seeds of ‘Natural Language Processing’ in my mind during my collegiate and further encouraging me to not only undertake this research work but successfully completing this herculean task through his continued guidance and full support, as always. Under his able guidance, I have successfully overcome many difficulties during this research work and got opportunity to learn new skills.

My humble and sincere thanks also to the Hon’ble Prof. S. U. Meshram, Vice-Chancellor, North Maharashtra University, Jalgaon as well as former Vice-Chancellors of the university, Prof. N. K. Thakare, Prof. S. F. Patil, Prof. R. S. Mali and most importantly Prin. K. B. Patil, for giving me opportunity and exposure to various facets of professional and research field. My sincere thanks to Prof. D. G. Hundiwale, Director, B.C.U.D, North Maharashtra University, Jalgaon, under whose regulation, I could complete my research work.

I am thankful to my teachers cum friend philosophers and my senior colleagues Prof. Satish R. Kolhe and Prof. Rajeev Wankar (University of Hyderabad), who have been by my side through thick and thin, for their timely suggestions and critiques.

My special thanks to living legend Prof. Arvind Joshi (IRCS, Pennsylvania University, Upenn, Philadelphia) and Dr. Hemant Darbari, Executive Director, C-DAC Pune for introducing me to this wonderful field of Machine Translation and providing me opportunity to work on practical MT system like ‘MANTRA’. I am also thankful to AAI, C-DAC team for their remote support during different stages of my work.

I feel fortunate to get opportunity to work with eminent language experts like (late) Prof. Surajbhan Sing and Dr. Vijay Kumar Malhotra (Director, Rajabhasha Vibhag, Ministry of Indian Railways, New Delhi), (Late) Prof. Mahendra Kumar Pandey (MGHAV, Wardha). I am thankful to them for teaching me basics of language, grammar and different perspective of theoretical linguistics.
I am also thankful to Prof. Amba Kulkarni (University of Hyderabad), Prof. Kavi Narayana Murthy (University of Hyderabad) for giving me better insight on Paninian Tradition and suggestions on evaluation part respectively.

I am equally grateful to Dr. Nisheeth Joshi (Banasthali Vidyapeeth, Rajasthan) for his help during automatic MT evaluation using E-ILMT evaluation tool.

I am grateful to Hussain H. Dawoodi, Vilas Mahajan, Vishal Zambare, Komal Narkhede, Akshay Desale, Dhananjay Zalte and Amrapal Shendre for their active assistance during data creation, entry and validation, framework testing, documentation part and few parts of resource tools implementation.

I express my sincere thanks to my senior colleagues Prof. Rakesh Ramteke and Dr. Manish Joshi at the school of Computer Sciences for their support.

Thanks are also due to other colleagues Dr. A. S. Patil, Dr. Manoj Patil and Ajay U. Surwade and other colleagues from the School of Computer Science for their support.

I have no words to express my sense of gratitude towards Dada (my father) and Aai (mother), who always encouraged me for undertaking new ventures and stood by me in all tough incidents in my till date life. Special thanks to my father for generating special interest towards languages and teaching me English speaking right from my childhood, when we use to stay in very remote villages in Maharashtra. I owe a word of thanks to my uncle APPA, who always wanted to see me as a doctor in my professional career and my elder cousin Arun dada and Vahini.

At this juncture, I can’t forget contributions of Mrs. Sandhya Kaul, P. A. Kulkarni uncle and aunty who taught me life skills and inculcated good moral values for shaping my personality. I am thankful to Jyoti (Aakka) Khanore, Bandu, Dinesh Badgujar, Harish Sharma and Anuradha Agrawal for their care and support during most critical phases of my life.

I am extremely thankful to Dr. Milind Kolhe and his hospital team for restoring normal life in me, without which I might not have been able to undertake such research work.

I also record support from my wife Monika during this journey for handling the home front and sacrificing moments of social and personal life. Finally thanks to joy of my
life my son Swami (Baboosh), whose entry has really filled my life with cheers, colors & great hope, and putting back life in my life.

Last but not the least, priceless thanks to Yogesh Mahajan, without whose timely help, I might not have been able to see the world again.

Ramchandra P. Bhavsar