

## **Acknowledgments**

I sincerely thank my research advisor and mentor, Dr. Anantha Krishna Chintanpalli, Assistant Professor, Department of Electrical and Electronics Engineering, BITS Pilani, Pilani Campus, for the opportunity to work with him. He has always stood by me with his valuable guidance and support. Since, I joined BITS Pilani as a lecturer in EEE Department, he guided me in both professional and personal areas. He also introduced me to the domain of computational modeling in auditory signal processing which was relatively new to me, and motivated me to pursue my dreams. He nurtured me, inspired me and helped me to excel in all aspects. I am grateful to him as my mentor and thesis supervisor. I would also like to thank Prof. Michael G. Heinz, from Purdue University, who had provided his valuable inputs and suggestions during this dissertation. My doctoral advisory committee members, Dr. Sainath Bitragunta and Dr. Pawan K Ajmera have always stood by me with their valuable feedbacks.

I sincerely express my profound gratitude to Prof. Souvik Bhattacharyya, Vice-Chancellor, BITS Pilani, Pilani to provide me with the opportunity to carry out my Doctoral studies at BITS. I convey my sincere thanks to Prof. Sudhirkumar Barai, Director, BITS Pilani, Pilani for the constant support. I also express my gratitude to Prof. M. B. Srinivas, Dean, Academic Graduate Studies and Research (Ph.D. Programme) Division and Prof. Jitendra Panwar, Associate Dean, Academic Graduate Studies and Research (Ph.D. Programme) Division for providing valuable support throughout the programme.

I would like to thank the Departmental Research Committee (DRC) convener Dr. Praveen Kumar A.V. and all DRC members for their support. I

would like to thank Prof. H.D. Mathur, Head of the EEE Department, for motivating me throughout my Ph.D. degree programme. I would like to thank all senior professors Prof. Chandra Shekhar, Prof. S. Gurunayanan, Prof. V. K. Chaubey, Prof. Surekha Bhanot, Prof. Anu Gupta, Prof. Navneet Gupta, Prof. Hari Om Bansal, Prof. Dheerendra Singh, Prof. Abhijeet Asati, and Prof. K.K.Gupta for their guidance, constructive criticism, and continuous motivation. I would like to thank library committee members for providing all the journal resources required during the Ph.D. work. Collective and individual acknowledgments are due to all my colleagues who have directly or indirectly helped me in my work. I am grateful to my friends and my other colleagues Mr. Karri Babu Ravi Teja., Dr. Sujan Yenuganti., Mr. Ankush Jahagirdar., Dr. Praveen Kumar A.V., Dr. Puneet Mishra., Dr. Arnab Hazra. for being with me during my research days. At the same time, I am grateful to all the staff members of the EEE department for their support in all kinds of official work.

Last but not least, I am incredibly indebted to my family for making me what I am today. My parents' unflinching support for my education throughout has made my Doctorate possible today. My wife, Karishma, has been my strongest pillar of support, taking care of everything, easing out of my life and helping me excel in all my endeavors. The sheer amount of hard work she does to make my family run is an inspiration for me. No words can express my love and gratitude for her. Finally, I am indebted to the God for always guiding me.

**HARSHAVARDHAN S**