ACKNOWLEDGMENTS

First of all, I bow down myself in the feet of the God, the Almighty, who has granted countless blessing throughout my research work. His benevolence has made me successful in my academic pursuits

Secondly, I would like to express my deep and sincere gratitude to my guide **Dr. Viral Kapadia**, Associate Professor, CSE Department, Faculty of Technology & Engineering, and Deputy Director, Computer Centre, The Maharaja Sayajirao University of Baroda, Vadodara, for his continuous motivation, invaluable advice, and guidance. His wisdom, knowledge, and commitment to the highest standards inspired and motivated me a lot. He has been very generous in providing the help for carrying out my research. He is a gentleman who does all his duties with full devotion. I feel proud to have him as my Ph.D. guide.

I am thankful to my parents for, they have always been my motivation to do good for the society. I owe a lot to my lovely wife, daughter and son, as I could not give enough time to them in this duration of doctoral studies. Without their generous and selfless support, this work would not have been possible.

I have a feeling of gratitude to **Dr. Apurva Shah** sir, Head and Professor, CSE Department, Faculty of Technology and Engineering, The Maharaja Sayajirao University of Baroda, Vadodara for giving the valuable suggestions for the betterment of this work.

I am also thankful to **Dr. Vishwas Raval**, Assistant Professor, CSE Department, Faculty of Technology & Engineering, The Maharaja Sayajirao University of Baroda, Vadodara, for providing any kind of help that I needed at any point of time in this duration and who has always stood by me.

Finally, I thank my other colleagues in the department at my previous and current institute whose support and guidance helped me to move ahead. I am thankful to all my friends, well-wishers, who directly or indirectly supported me throughout this period morally and financially too.

VIRENDRA KANTILAL BAROT