ACKNOWLEDGEMENT

By the grace of almighty GOD, It would not have been possible to write this doctoral thesis without the help and support of the kind people around me, to only some of whom it is possible to give particular mention here.

This thesis would not have been possible without the help; support and patience of my principal supervisor, Dr. Neeraj Wadwa, her wide knowledge and her logical way of thinking have been of great value for me. Her understanding, encouraging and personal guidance have provided a good basis for the present thesis. I appreciate all her contributions of time, ideas, to make my Ph.D. experience productive and stimulating. The joy and enthusiasm she has for her research was contagious and motivational for me, even during tough times in the Ph.D. pursuit. I am also grateful for her help throughout the project.

I wish to express my sincere thanks to our H.O.D., Prof. Sanjeev Sharma and all faculty members specially Dr. Vibha Rani, Dr. Sujata Mohanty for their support and guidance throughout my PhD work and also Dr. Krishna Asawa, Department of Computer Science for their extremely valuable guidance, support and encouragement.

I would like to acknowledge honorary group member our CEO Prof. Y. Medury, Vice Chancellor Prof. J.P. Gupta, Prof. S.K. Khanna, Dean Prof. Maskara, Registrar Col. Vijay Kumar and all members of JIITU family with out whose blessings, support and encouragement this work would not have been possible.

Furthermore I am deeply indebted to the laboratory staff, finance department and library staffs, for helping the departments to run smoothly and for assisting me in many different ways Ms. Priyanka Chakrabarti, Narender Yadav, Subhash Jha deserve special mention.

Finally I want to thank my family. I owe my loving thanks to my sisters, Sarika Agrahari, Ashwini Gupta and their families for their loving constant encouragement and moral support in my life including my PhD. My loving thanks to my brother in law Vikas and Sister in law Bhumika. They let me own a happy family. And also I am grateful to my in laws for their support, blessing and encouragement.
A special thought is devoted to my parents for a never-ending support, encouragement and blessings who raised me with a love of science and supported me in all my pursuits.

The encouragement and support from most of all for my loving, supportive, encouraging, and patient husband Abhishek and our sweet, cute, little, always positive and joyful baby, Atharva is a powerful source of inspiration and energy. They have lost a lot due to my research work. Without their encouragement and understanding it would have been impossible for me to finish this work and for which my mere expression of thanks likewise does not suffice.

Lastly, I offer my regards and blessings to all of those who supported me in any respect during the completion of the project.

Sarita Agrahari