## **Acknowledgements**

I dedicate this work to my little lovely son Heyansh. His blissful smile always makes me feel joyful and stronger. I deeply express my gratitude to my family for their encouragement, love and unconditional support. I am thankful to my parent-in-law for their support and motivation. I thank my wife Kanika for her understanding patience, positiveness and dedication was proved to be my back bone throughout the PhD journey.

At this moment of accomplishment I would like to express my deepest gratitude for my PhD supervisor Dr. Rahul Chhibber for giving me an opportunity to do PhD under him. Throughout My PhD journey at each step he motivated me and helped me in doing my work. I can't think of accomplishing my PhD without his guidance. His dedication towards research work always inspired me. From his expertise, I learned a lot and implement the same in finishing my Ph.D. work.

I am also thankful to my friends Sumit Mahajan, Waris Nwaz Khan, and Jagdish Kumar for their help.

Finally I would like to express my sincere thanks to IIT jodhpur for providing me a place to accomplish my research work.

Lochan Sharma Ph.D. Student

