Acknowledgment

I thank my Ph.D. Thesis Supervisor, Dr. V. V. M. Sarma Chandramouli, for introducing me to the area of renormalizations of unimodal and bimodal maps with low smoothness. In the process, I have learned about the problems associated with renormalization. I am grateful to him for his guidance, support as well as for constantly motivating me to give my best in the work that I did. Also, I am very thankful to the Members of the Doctoral Committee, Dr. Vivek Vijay, Dr. Kirankumar Hiremath and Dr. Barun Pratihar, for their enthusiastic and continued guidance during the research work. I have learned a lot from the course "Chaos theory and its applications" given by Dr. Puneet Sharma. I would like to thank the anonymous referees for the valuable comments and suggestions to improve the manuscripts of the publication work.

During my stay at IIT Jodhpur, I have such a wonderful and memorable experience because of these people, Pravesh Kumar, Manish Raghav, Dileep kumar, Shivam Chaturvedi, Rammohan, Arka, Abhishek, Sumit and Prashant, for all the happiness and support. With special thanks to Aniket D. Monde for always motivating me and being my gym partner. I had a great time with Shivam, Aniket, Abhinav and Dileep in the badminton court. I had an amazing and memorable time with Manish Raghav, Dileep Kumar and Prashant Kumar during the workshop in IIT Delhi. I would also like to thank all my friends, specially Somank, Aishwaraya and Sushmita from the department of Mathematics, and the institute. Also, I thank my friends Gaurav Khurana, Rahul Sharma, Sachin Pathak, Deepak and Arvind Kumar, for their company. I thank Mr. Hem Singh Baghela for his valuable fitness training.

Last but not the least, I wish to acknowledge my family for their constant love, patience and encouragement. I thank my father Mr. Rajendra Kumar, mother Smt. Mahendri Devi and brothers Rahul Kumar and Nishant Kumar for always motivating me. I want to thank my other family members for all their love, support and blessing. My special thanks to Ms. Manisha for her unconditional support. Also, I want to thank God for giving me good health and strength.

> Rohit Kumar Ph.D. Student