## Acknowledgement

First I would like to thank my supervisor Dr. J. N. Pandya for his valuable guidance, continuous encouragement and admirable patience during this research work. His eagerness and enthusiasm to take up challenging tasks inspired me a lot in exploring the subject in more detail. He gave me complete freedom and support to do the things in the way I wanted. I feel blessed to have a mentor like him. I would also like to thank Prof. P. C. Vinodkumar, Sardar Patel University for his help and suggestions in the initial stage of this work.

I would like to thank Prof. Mikhail A. Ivanov, BLTP, JINR, Dubna, Russia in collaboration with whom the numerical work was done for D and  $D_s$  mesons. He carefully explained the Covariant Confined Quark Model calculations in minute details during my visit to JINR for Helmhotz International Summer School. I feel highly privileged to have guidance and support from him throughout these calculations. I also thank our collaborator Chien-Thang Tran from Naples University for helping in computations for D and  $D_s$  decays. The support from Prof. Jürgen G. Körner from Mainz University and Prof. P. Santorelli from Naples University are highly appreciated. My special thanks to my friend Shesha with whom I started learning the Quantum Field Theory. She helped me in understanding and solving Feynman diagrams.

I would also like to thank Dr. Arun Anand and Dr. Kirit Lad whose continuous motivation, clear guidance and support were a great work force for me. I am thankful to Dr. B. S. Chakrabarty, Head of the Department and Prof. Arun Pratap, Dean, Faculty of Technology and Engineering for providing me research facilities. I thank our M.Sc. dissertation students Foram, Kanan, Dhruvit, Akshay, Brijal, Radhika and Hemangi for providing lot of inputs for this thesis. I also express my thanks to the colleagues and very good friends Harshal, Sohan, Sonal, Supriya, Laxmi, Nimit, Avani, Swapnil Prabhu, Vismay, Kevil, Rahul, Piyush, Deepak, Dhavalbhai, Margi, Priyanka, Janki, Muqdha, Nirav and Parth.

I am also thankful to my friends Raghav, Chaitanya, Gargi and Preeti for being there with me in the difficult times and also handling my frustrations and anger. Also I would also like to thank Chaxu, Payal, Kajal for providing moral support and encouragement.

I would like to express my deep sense of gratitude to my parents and sister for their patience and continued encouragement, without whose cooperation and moral support it would not have been possible to carry out this work.

My acknowledgement is also due to University Grants Commission, New Delhi for providing me research fellowship through a major research project on Decay Properties of Hadrons undertaken by Dr. J N Pandya in this department.

(Nakul R Soni)