

## Acknowledgements

This thesis work is an essence of not just my hard work, but also the help and support I received from all the individuals who crossed paths with me during this tough yet incredible journey.

First and foremost, I would like to express my warm gratitude towards my Ph.D. Thesis Supervisor, *Dr. Shree Prakash Tiwari*, for his providing me the chance to join his lab and an incredible team to work with. His constant support, motivation, patience, feedback, and encouragement has always inspired me to stay focused amidst many failures and success. Apart from his remarkable research experience, I thank him for teaching me vital communication and presentation skills.

I also thank *Dr. Mahesh Kumar*, *Dr. Ambesh Dixit*, and *Dr. Satyajit Sahu*, Members of the Doctoral Committee, for providing their valuable feedback and encouragement that helped me in expanding my research from various perspectives.

I heartily thank my seniors *Dr. Deepak Bharti*, *Dr. Giriraj Vyas*, and *Dr. Shilpa Pandey* for always motivating me and for sharing their experience in technical as well as non-technical aspects of research. I would like to especially thank *Dr. Deepak Bharti* for always standing like a pillar for me and being a constant source of motivation throughout my journey.

I am immensely thankful to my fellow friends *Mr. Vijendra Singh Bhati*, *Mr. Adarsh Nigam*, *Mr. Parveen Dagar*, *Mrs. Chandni Kumari*, *Mr. Ajay Kumar Mahato*, *Mr. Abhishek Sahu*, and *Mr. Abhishek Kumar* for always stand by me during the tough times. I acknowledge them for providing a fantastic company during this journey, for stimulating discussions, for sharing the moments of my success and sorrows, and I'll always be indebted to them for the incredible memories and experiences we shared.

I am thankful to my labmates *Dr. Saravanan Rajamani (Postdoc fellow)* and my juniors *Mr. Vivek Raghuvanshi*, *Mr. Pulkit Saxena*, *Mr. Anurag Dwivedi*, *Ms. Shalu Saini*, *Mr. Neeraj Goel*, *Mr. Rahul Kumar*, and *Mr. Amit Shringi* for being helpful and providing their zestful company in the lab and making our lab environment always so high-spirited and cheerful.

I also thank my ex-labmates, *Mr. Mandeep Jangra* and *Ms. Shivani Agarwal*, for fruitful discussions and sharing their experiences that eventually helped me in my research and generating great results.

I heartily thankful to my parents, my wife, and my family for their unconditional support, love, and patience. I am grateful to them for keeping confidence and always being the driving force that keeps me moving forward. I am highly indebted to the sacrifices they made for me during this period.

I thank my institute Indian Institute of Technology Jodhpur, for providing the necessary infrastructure and manpower. I acknowledge my funding agency Digital India Corporation, Ministry of Electronics and Information Technology, for providing the much needed financial assistance through Visvesvaraya PhD Scheme for Electronics and IT.

Lastly, the biggest thank, with all devotion to *My Lord*, who imparted me with courage, strength, and patience in odd times, that helped me to stand again and reach the ultimate goal. I thank him for being with me during this journey and providing me imperative capabilities to proceed successfully.

*Ishan Varun*  
Ph.D. Student

