Acknowledgments

Though, only my name appears on the cover of this dissertation, I owe my gratitude to all those people who have made this thesis possible. It is because of them that I could return to academics nearly two decades after regular college studies. To appear in examinations with young students has been both humbling and invigorating reset of life.

I take this opportunity to express my profound gratitude to my supervisors Dr. Rakesh K. Misra and Dr. Devender Singh, Professors, Department of Electrical Engineering, IIT(BHU), Varanasi for their exemplary guidance, mentoring and constant encouragement throughout the course of this dissertation. Sri Pravin Pradhan, the stellar genius I was fortunate to have served with professionally, gave invaluable insights which gave ready connect with the real world applications of the work. Abhishek Kumar, a PhD scholar with IIT(BHU) was ever ready with hacks and programming skills whenever the work cried for assistance. I hope that I can sometime pay back for the help he extended-till then a thank you should suffice.

My colleagues, Sri Sanjiv Sehgal and Sri Goutam Banerjee who also embarked on their academic journey with me, gave their sympathetic ear to vent frustrations which arose as my academic work plodded though children's coming of age and vagaries of professional life. It is to my credit that I successfully tricked my wife to take admission in a PhD program-so that part of the equation got balanced!

To parents, who form the core of my being, I wish to dedicate the work with the hope that I can also be as inspiring to my children as they have been to me.

I am obliged to the faculty members and staff members of Department of Electrical Engineering, IIT(BHU), Varanasi who have been patient to deal with challenges my candidature threw up.

Date: _____

Sujeet Mishra