ACKNOWLEDGEMENT

I'm deeply grateful to Prof. P.C. Saxena for not only accepting me as one of his Ph.D. student, but also for his continuous support of my academic pursuits. I am really indebted for his patience to understand my rough & fuzzy ideas which resulted into this thesis. He will always be inspiration for all my work. I am very grateful for having opportunity to learn from his multi-faceted personality. He channelized the thought processing that brought me not only an international exposure but also an appreciation from the Soft Computing pioneer Prof. A. Skowron, in person, in Korea.

The research experience, which will last for a lifetime and the reason why it shall remain engraved in my memories, is solely because of Prof. P.C. Saxena, with whom I had the honour of working.

I express my profound gratitude to Prof. Sonajharia Minz, Dean, for her kind and active cooperation and support for completion of this research work.

I express my deep sense of gratitude to Dr VK Saraswat, SA to RM, DG DRDO, Secretary Defence R&D, Dr W Selvamurthy CC R&D (LS), for inspiration & support to carry out this research work.

I also wish to thank Dr. AK Singhal, of Institute for Systems Studies and Analyses, Prof. Harish Kundra of Rayat Institute of Engg. Ropar, Dr. LK Sinha of Defence Terrain Research Lab., Dr. Devender Jha of Scientific Analysis Group, for their whole hearted support to accomplish this thesis.

*My parents (Dr. PN Panchal & Mrs. Rajeshwari) have always been inspiration and therefore, this research work is dedicated to them. It is the unconditional love, affection & continuous support from my wife (Susheela) and my son (Antriksh) that I could complete this endeavor.*
I acknowledge the support received from the entire faculty and staff of *School of Computer & Systems Sciences, Jawaharlal Nehru University* especially Shri Chander Prakash, Asstt. & Shri SP Sharma, Admin. Officer.

Finally, I would like to express my heartfelt gratitude to the students, senior colleagues and my friends those have played an important role in the successful completion of this research endeavor.

[VK Panchal]