

ACKNOWLEDGEMENTS

It's a great pleasure to express my sincere thanks and heartfelt gratitude to my guide, **Dr. Parag Diwan, Vice Chancellor, UPES**, for his invaluable support, able supervision and constant encouragement during this research work. I am indebted to him for his superior insight, valuable and prompt timely advice and generous help all through the research work. I owe the successful completion of the research work to his sustained interest and inspiring mentorship.

I take this opportunity to show my deepest regards to **Dr. S.J.Chopra, Chancellor, UPES**, for being my source of energy and thank him for his constant reassuring smile. I would like to show my gratitude to **Prof. G.C.Tewari, Pro Vice Chancellor, UPES** for providing me an encouraging learning environment and infrastructural facilities to complete the research. I extend my thanks to **Dr. Shri Hari, Dean, COES**, for his ever-motivating words.

I wish to share the credit of this accomplishment with **Dr. D.N.Saraf**, for his unstinted support and endless encouragement. I thank him for his precious time, numerous knowledge sharing and motivating discussions that greatly contributed to shape up this research work. I thank **Dr. B.P. Pandey** for his valuable suggestions and constructive feedback. I am very grateful to **Dr. V.K.Sibal, Director General, DGH**, for his energizing discussion during my visit to DGH.

I extend my hearty thanks to **Dr. Clive Spenser, from Logic Programming Associates, UK** for his technical support every time, in my hour of need. I wish to express my respectful regards to domain experts, **Shri.S.K.Das, (Head, GEOPIC)**, **Dr.A.K.Shrivastava (Chief Geologist and Geophysicist, ONGC)**, **Prof.R.P.Singh**, **Dr. S.P.Kulshreshtha (Technical Director-IT, NIC)**, **Dr. Ashish Bharadwaj (Director-IT, UPES)** for their expertise. I thank the staff and officials of UPES library, for providing me the right peaceful environment to compile my thesis.

My thanks are due to my family, for their sacrifices, patience, and for doing much more than just offloading my household responsibilities and commitments.

This research work would never have been accomplished without the care, affection, support and encouragement of my wonderful husband **Ar. Deepak Ahuja** who spent countless hours so gallantly, being a mother to our two young ones.