ACKNOWLEDGEMENT

With warm feelings, I place on record my heart-felt gratitude and reverence to my Research Supervisor and mentor Dr. K. Thangavel, M.Sc., ML Phil., Ph. D., M.C.A. Reader in Mathematics, (on lien as Professor of Computer Science, Periyar University, Salem) Gandhigram Rural Institute-Deemed University, Gandhigram for his advice, support and encouragement during this research.

I express my sincere gratitude to Prof. L. Ganesan, Department of Computer Science and Engineering, Alagappa College of Technology, Karaikudi for his generous support and guidance throughout period of this research as member of the Doctoral Committee.

A special mention is deserved by Prof. K. Somasundaram, M, Sc., Ph. D. Head, Department of Computer Science and Applicatons, Gandhigram Rural Institute-Deemed University, Gandhigram for his guidance throughout the period of this research.

My heart-felt special thanks to excellence Dr. T. Karunakaran, Vice-Chancellor, Gandhigram Rural Institute-Deemed University, Gandhigram, for providing me moral support and encouragement throughout the period of this research.

My sincere thanks to Prof. M. Sundaravadivelu, Registrar, Gandhigram Rural Institute-Deemed University, Gandhigram for providing me moral support and encouragement throughout the period of this research.

My heartfelt thanks to Management and Principal, Hindusthan College of Engineering and Technology, Coimbatore for their generous support by providing me a good infrastructure during the period of this research.
My thanks to the management and Principal, Sudharsan College of Engineering, Pudukottai, for permitting me to undertake research.

I am indebted to Prof. A. K. Nandhakumaran, Department of Mathematics, Indian Institute of Science, Bangalore, for his generous support and guidance throughout period of this research.

My thanks to the management of R.V.S College of Engineering and Technology, Dindigul, for encouraging me to undertake research work.

My thanks to the faculty members of the Department of Mathematics, Department of Computer Science and Applications, Gandhigram Rural Institute-Deemed University, Gandhigram for supporting throughout the period of this research.

My thanks to the collaborative researchers Shri D.Ashok kumar, Shri P.Jeganathan, Mrs. A.Pethalakshmi, Shri R.Sivakumar, and Shri A.Kajamoheedeen, for supporting throughout the period of this research.

Words are inadequate to express my gratitude to my wife Mrs. M. Santhi who has been pillars of strength and without whose moral support and encouragement this work would have has remained incomplete.

Finally I thank the God Almighty for the love, affection and blessings bestowed upon me.

Place: Gandhigram
Date: 28 June 2006

(M. KARANAN)