

## ACKNOWLEDGMENTS

I wish to express my sincere thanks and deep sense of gratitude to my research guides **Prof. K. M. M. Prabhu** and **Prof. S. Srinivasan**, for their invaluable guidance, constant encouragement and keen interest in my work. I am extremely grateful to them for spending their valuable time with me for discussions in spite of their many other commitments and activities. They have been a great source of inspiration to work with and I shall always cherish my association with them with immense pleasure. Their futuristic vision and realistic ideas have created a new enthusiasm and an ever-increasing zeal to work and explore many new things.

I take this opportunity to thank my General Test Committee members **Prof. Ashok Junjhunwala**, **Dr. Vinitha Vasudevan** and **Dr. C. Sivaram Murthy**. They extended their co-operation in helping me with this research work. I am thankful to **Dr. C. Sivaram Murthy** for his general advice at a critical stage of my work.

It gives me immense pleasure to acknowledge **Dr. R. Aravind** who has helped me in many ways. I consider myself too fortunate to attend his courses in Communication Theory and Digital Communication. The Digital IC Design course, a brainchild of **Prof. S. Srinivasan**, in a true sense extracts innovation. The quizzes were really thought provoking. Without DSP and ADSP courses taught by **Prof. K. M. M. Prabhu**, I would not have known many things. I am indebted to him for his valuable lectures. I would like to extend my sincere thanks to **Dr. K. Giridhar** for his discussion on System Identification. I am thankful to **Dr. V. V. Rao** for his critical comments on my work. Special thanks are due to **Dr. Parthasarathy**, Head of the Department of Mathematics, for his timely help in introducing me to **Dr. Nandhini Kannan**, University of Texas, San Antonio, for further discussion on EM algorithm.

It has been a great pleasure and rewarding experience for me to work in the DSP laboratory. My laboratory seniors, **Giri** and **Rajesh**, have set high standards and have shown us a way to follow them. I am thankful to Giri for his discussion on time-frequency analysis. I am particularly thankful to Rajesh for he was the one who

introduced me to incremental EM algorithm when he was working on structured covariance matrix estimation. I spent most my stay in the laboratory discussing with him and they were always rewarding. My heartfelt thanks are to my laboratory mates **Madhu, Vijay** and **Dharani**. Madhu's views, his comments and suggestions have helped me to improve my attitude towards work and learnt how to be sincere and honest. Vijay was a live example of a hardworking student and I am fortunate to have a colleague like him. Probably, I was the one who used most of his PC troubleshooting skills to a maximum extent. I have always enjoyed the company of Dharani in a unique way that will be everlasting. I express my special thanks to Shri. L. Thangavelu and Gandhi for their invaluable help and cooperation in the lab along with inexpressible cordiality and affection which they had shown to me.

I would like to express my special thanks to **Nagu, Rakru** and **Babai** for their brotherly attitude and constant encouragement, which made my stay at IIT joyful and memorable. My thanks to my dear Narmadites, **Venku, Subbu, Nag, Mabbu, Bux, Koti, Rami, Jalls, Chinni, Vikky, Din** and many others who have made my IIT life easy by sharing moments of sorrow and times of joy. I wish our friendship will cherish for a long time and I acknowledge with gratitude their encouragement and support.

I am highly indebted to my **Parents** and other family members for their constant encouragement and support in carrying out this research work. Finally, I thank one and all who have helped me either directly or indirectly on all my activities at IIT, Madras.

Soma Sekhar Dhavala