

ACKNOWLEDGMENTS

I would like to take this opportunity to express my deep sense of gratitude and profound feeling of admiration to my thesis supervisor. I would like to gratefully and sincerely thank Dr. Chandan Singh, Professor, Department of Computer Science, Punjabi University, Patiala for his guidance, understanding and patience. His mentorship was paramount in providing a well rounded research experience. He encouraged me to not only grow as a researcher but also as an independent thinker. I would also like to thank Dr Kanwalpreet Singh Grewal, Grewal Dental Clinic, Ludhiana, Dr. Suchinder Singla, Associate Professor, Guru Nanak Dev Dental College & Research Institute, Sunam, Punjab for their assistance and guidance in understanding cephalometric analysis, and providing help in manual marking of landmarks. This work would have not been possible without the help of Dr. Sohail Sheikh, M.M. Institute of Medical Science and Research, Maharishi Maekandeshwar University, Mullana. I am greatly thankful to him for his help in getting the digital cephalograms. My heartfelt thanks also goes to Dr Tim J. Hutton, Bioscience Computing, UCL, London for providing his cephalometric database and Dr Rahele Kafieh for helping me acquire Dr Hutton's database. My warm appreciation is due to Manpreet for providing unconditional help whenever needed.

Finally, my greatest regards to the Almighty for bestowing upon me the strength to face the challenges of life and complete this thesis successfully. My special thanks go to my family for their cooperation. Last but not the least; I would like to thank my husband for his support and patience and my son Aditya for the sacrifices he had to make due to my busy schedule. I dedicate this thesis to my brother Reetmohinder who is no more with us physically but his motivating words and love will always be a source of inspiration for me.

Amandeep Kaur Kullar

July, 2012