ACKNOWLEDGMENT

Firstly, I would like to thank Prof. (Dr.) Y. Medury, COO (Jaypee Education System) and Vice Chancellor (Acting), JUIT; Brig. (Retd.) Balbir Singh, Director JUIT; Prof. (Dr.) T.S. Lamba, Dean (Academic & Research) and Prof. (Dr.) R.S. Chauhan, Dean (Biotechnology) and HoD (Biotechnology & Bioinformatics) for entrusting and providing me the opportunity to pursue my research work at Jaypee University of Information Technology, Waknaghat, India.

From deep of my heart, I would like to thank my guide and mentor Dr. Pradeep Kumar Naik, Associate Professor (Bioinformatics) for his encouragement & guidance in pursuing my research in the emerging and challenging area of clinical informatics. I would like to specially thank him for leading me through all these years and being more than a research guide. His positive attitude and zest for quality research always encouraged me and bought the best out of me. I deem it a privilege to be doing my PhD research under him, who has endeared himself to his students.

I am grateful to DIHAR - Leh, DRDO, Ministry of Defence, Government of India, as part of this research work was kindly supported by DIHAR, DRDO Grant - DIHAR/01/ASSIGN/12.

Would take this opportunity to thank all the hospital and diagnostic centres across India, who readily agreed to share the clinical data (as per the NOC, won't be disclosing the names). I also owe a big thanks to four of my B.Tech (Bioinformatics) students - Ms. Priyanka Arora (2007-11), Ms. Shradha Pant (2007-11), Ms. Meemnasa Sood (2008-12) and Ms. Poorvika Vijayvargia (2008-12), who helped me in collection of clinical data, by visiting many of these hospitals and diagnostic centres for collection of hard copied reports. Also would like to thank Prof. (Dr.) M. C. Pant from Ram Manohar Lohia Hospital, Lucknow, India and Dr. Ankur from King's George Medical College, Lucknow, India who provided the technical guidance corresponding to aspects of brain tumor and other clinical parameters during the course of this study.

A big thanks to Dr. Pradeep Kumar Pandey from Dept. of Mathematics, Jaypee University of Information Technology, for his kind inputs and help provided to understand the concept of Jacobian and coordinate transformation. Also, my sincere thanks go to Dr. Harvinder Singh (Assistant Professor) and Dr. Anil Kant (Assistant Professor) for their continuous encouragement and support. Also would like to thank all the faculty members, support staff and students of Jaypee University of Information Technology, for their helping attitude and moral support. Beside, I can never forget my fellow researchers Ms. Seneha Santoshi and Ms. Charu Suri who have helped me in numerous ways. I will always cherish the years spent in the Department of Biotechnology & Bioinformatics, Jaypee University of Information Technology.
Also, would like to thank all my ex-colleagues and mentors from Sapient Corp. Pvt. Ltd., India who introduced me to the world of business intelligence technology.

Lastly, my parents (Shri. Tapas Kumar Sengupta and Smt. Bithika Sengupta) whose blessings have helped me in this journey. I cannot forget the pain that my parents have taken throughout my studies. It was only because of their support, constant encouragement, prayers and blessings that I could overcome all frustrations and failures. Also my dear friends and teachers from Delhi Public School, Korba (Std. II -XII) and Jaypee University of Information Technology (B.Tech. 2003-07) who were always with me during hard times.

I would like to express my heartfelt gratitude to all those who have contributed directly or indirectly towards obtaining my doctorate degree and apologize if I have missed out anyone.

(Dipankar Sengupta)

28/03/2014