Acknowledgement

In the name of Allah the most Merciful and Beneficent

First and Foremost praise is to ALLAH, the Almighty, the greatest of all, on whom ultimately we depend for sustenance and guidance. I would like to thank Almighty Allah for giving me opportunity, determination and strength to do my research. His continuous grace and mercy was with me throughout my life and ever more during the tenure of my research.

Now, I would like to thank and express my deep and sincere gratitude to my supervisor Prof. S. M. K Quadri, Director, Department of Computer Sciences, University of Kashmir for his continuous support, guidance and encouragement. In addition to being an excellent supervisor, he is a man of principles and has immense knowledge of research. I never forget and thankful for his continues support during the trouble times of my research.

I would also like to express my sincerest gratitude to my ex-supervisor Late Dr. Mehraj-u-Din Dar, who showed me the path in the early stages of my research. He was a person with dynamic leadership capabilities and served the community with great dedication. He was a person having a brave heart who fought with Cancer over the period of one year. May Almighty bestow him with Jannah.

I would also like to express my gratitude to the pioneers of my research field. Their work helped me a lot in my research. They include researchers like Rejio Savola, Pratyusa K. Manadhata, W. Jansen, Jaquith Andrew and more.

A Ph.D. candidate also has a life besides studies. Besides my research activities, I also enjoyed my stay in UoK. I thank my fellow colleagues and friends for spending time with me in canteen and for playing counterstrike in lab during leisure hours.
I owe everything to my family who encouraged and helped me at every stage of my personal and academic life and longed to see this achievement come true. I would be nothing without the love, sacrifices and support of my parents. I dedicate this work to my sincere and generous father and my loving mother. Every breath of my life and drop of blood in my body is dedicated for them. I am thankful to a person close to my heart for the tremendous support despite the sufferings of my hectic working hours, who tolerated the tiring times of my research and believed in me when I doubted myself.
I love you all.

Irshad Ahmad Mir