

ACKNOWLEDGEMENT

“To be able to thank ALLAH for a blessing is a blessing within itself” my lord, ALLAH the almighty, the most merciful, the most generous, i thank you for all the countless blessings and your plans that has brought me this far in my life.

I am deeply grateful to my supervisor, Prof S. M. K. Quadri, for being such an amazing mentor in my research and my carrier. Your rare talent to steer and develop scholars with your gentle advice rather than commands, your generous and knowledgeable ideas from time to time and your patience towards me, helped me greatly and gave me the courage throughout my Ph.D study. Thank you sir.

I also wish to express my sincerest gratitude towards my ex-supervisor, Late Dr. Mehraj-u-din Dar, for his gentle and unfaltering guidance, his belief in me and his insightful suggestions encouraged me during the early stages of my Ph.D. May Allah bestow you with Al-Firdaus.

I would also like to thank Prof. Arif Wani, for his support, and rest of the teaching and non-teaching faculty at the Department of Computer Sciences, UoK. I am also deeply thankful to the staff of IT&SS for their unconditional help.

My Ph.D. work would have been impossible without the involvement of many different persons, my special thanks to Dr. Sajid Yousuf Bhat for his guidance and support, Dr. Wasim Ahmad Bhat for his words of encouragement, Dr. Umar Farooq for his *“mamu-giri,”* Dr. Irshad Ahmad Mir for everything, Mr. Uzair Bashir for always being there for me. I am also thankful to Dr. Bilal and Dr. Faheem Masoodi for their help. I am also very thankful to Mr. Tawseef and Mr. Zahid for the coffee at CCD. Furthermore i would like to thank all my colleagues, friends and students at UoK for their help and support. I am also very thankful to employees at Dean Research office for their generous help.

I would also like to thank Mr. Fahad Akram, Mr. Furqan Khan, Mr. Hannan and Mr. Umar Malik, for their brotherhood and the quality time spent whenever we are together and their company since the carefree days of our childhood. I am deeply indebted and thankful to my dear friend Mr. Arif Mohammad for his company and support.

As a Ph.D student I would like to thank James Hayton for his Ph.D blog, the creators of Kali-Linux, Back-Box Linux, Sci-Hub, Work-Flowy, Sockstress, Siege, Mendley etc., all the open source community and Microsoft, for providing me with the necessary tools that helped me greatly in the completion of my research work. The work would not have been possible without my Sony Vaio SVF-15218SNB and VGN-NW28GG machines and my DELL S2240LC extended display, and all the systems and equipment's in the lab that ran my experiments.

No words will ever be sufficient to express the never-ending support, care, love, guidance and blessings of my mother and father which they have been showering upon me. I am eternally indebted for everything they have given me, my sincerest thanks to my parents for everything and being my strength and support throughout my life. I am also very thankful to my grandmother and my late grandfather for everything that they have taught me.

Availability is not confined to computers only, its matters in relationships too. I am greatly thankful to my brother Taufeeq Ahmad Mir, my younger sister Snober Mir and my elder sister Sahira, for being there with all the love, care and support during my Ph.D. Lastly, my little angels; Fajr, Fatima and my new buddy Muhammad, your smile and presence kept me motivated towards my goal and always gave me the best time during my stress hours.

Subair Q. Mir