Addressing Cybersecurity Challenges in Smart Cities

The modern and disruptive technological advancements offer profound promises for the future of smart cities, which harness the power of ICT to address the urbanization challenges and consequently bolster the quality of life of its inhabitants. Recently, it has been witnessed that many countries have built smart cities and this concept is booming worldwide. The use of cutting-edge technologies in the smart cities e.g. cyber physical systems, IoT, Cloud computing, blockchain, AI, and Big Data could bring an array of benefits to provide a multitude of useful services to help all the stakeholders. These services can be extended to a wide range of domains for efficient urban operations, including the environment, transportation, healthcare, tourism, mobility, energy management, and safety and security etc. However, the increased connectivity of smart cities may expose them to a diverse set of Cybersecurity risks, which could put the entire city operations and lives of its inhabitants at jeopardy. Therefore, as smart cities move from concept to reality, Cybersecurity becomes a top concern for the digitally connected communities. In this speech, we would explore various technical and technological concerns that could be faced by the smart cities. In particular, we would focus on the Cybersecurity challenges, which should be placed at the top of the agenda and recognized as the paramount priority of the stakeholders. Moreover, we would also discuss some of our research contributions as well as future directions in this domain.

About Prof. Muhammad Khurram Khan

Currently working at the Center of Excellence in Information Assurance (CoEIA), King Saud University, Kingdom of Saudi Arabia. He is one of the founding members of CoEIA and has served as R&D Manager from March 2009 until March 2012. He, along with his team, developed and successfully managed Cybersecurity research program of CoEIA, which turned the center as one of the best centers of excellence in Saudi Arabia and in the region. He is the founder and CEO of the 'Global Foundation for Cyber Studies and Research', which is an independent, non-profit, and non-partisan cybersecurity think-tank based in Washington D.C.

Prof. Khurram is the Editor-in-Chief of a well-reputed International journal 'Telecommunication Systems' published by Springer for over 25 years with its recent impact factor of 1.542 (JCR 2017). Furthermore, he is the editor of several international journals, including, IEEE Communications Surveys & Tutorials, IEEE Communications Magazine, IEEE Internet of Things Journal, IEEE Transactions on Consumer Electronics, IEEE Access, Journal of Network & Computer Applications (Elsevier), IEEE Consumer Electronics Magazine, PLOS ONE, Electronic Commerce Research (Springer), IET Wireless Sensor Systems, Journal of Information Hiding and Multimedia Signal Processing (JIHMSP), and

International Journal of Biometrics (Inderscience), etc. He has also played role of the guest editor of several international journals of IEEE, Springer, Wiley, Elsevier Science, and Hindawi, etc. Moreover, he is one of the organizing chairs of more than 5 dozen international conferences and member of technical committees of more than 10 dozen international conferences. In addition, he is an active reviewer of many international journals as well as research grant foundations of Switzerland, Italy, Czech Republic, and Saudi Arabia.

Prof. Khurram is an honorary Professor at IIIRC, Shenzhen Graduate School, China and an adjunct professor at Fujian University of Technology, China. He has secured an outstanding leadership award at IEEE international conference on Networks and Systems Security 2009, Australia. He has been included in the Marquis Who's Who in the World 2010 edition.

Awards & Recognition

Prof. Khurram has received certificate of appreciation for outstanding contributions in 'Biometrics & Information Security Research' at AIT international Conference, June 2010 at Japan. He has been awarded a Gold Medal for the 'Best Invention & Innovation Award' at 10th Malaysian Technology Expo 2011, Malaysia. Moreover, in April 2013, his invention has got a Bronze Medal at '41st International Exhibition of Inventions' at Geneva,

Switzerland. In addition, he was awarded best paper award from the Journal of Network & Computer Applications (Elsevier) in Dec. 2015.

Prof. Khurram is the recipient of King Saud University Award for Scientific Excellence (Research Productivity) in May 2015. He is also a recipient of King Saud University Award for Scientific Excellence (Inventions, Innovations, and Technology Licensing) in May 2016.

He has published more than 350 papers in the journals and conferences of international repute. In addition, he is an inventor of 10 US/PCT patents. He has edited 7 books/proceedings published by Springer-Verlag and IEEE. He has secured several national and international competitive research grants in the domain of Cybersecurity. Prof. Khurram has played a leading role in developing 'BS Cybersecurity Degree Program' and 'Higher Diploma in Cybersecurity' at King Saud University. His research areas of interest are Cybersecurity, digital authentication, IoT, biometrics, multimedia security, and technological innovation management.

He is a fellow of the IET (UK), fellow of the BCS (UK), fellow of the FTRA (Korea), senior member of the IEEE (USA), senior member

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