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Curriculum Vitae

OBJECTIVE

To excel in the area of Telecommunication Engineering in an organization that offers a research oriented environment with targeted goals and adequate opportunities for professional and personal growth.

EXPERIENCE

- Jul 2009 – Jan 2010 **Transmission Engineer.** NETKOM Technologies (Private Limited)
- Jan 2009 – Feb 2018 **Lecturer.** Department of Telecommunication Engineering, Balochistan University of Information Technology Engineering and Management Sciences (BUIITEMS).
- Feb-2018 – Present **Assistant Professor.** Department of Telecommunication Engineering, Balochistan University of Information Technology Engineering and Management Sciences (BUIITEMS).

EDUCATION

- Sep 2013 – Feb 2018 Sungkyunkwan University, South Korea, **MS & Ph.D. in Electrical and Electronics Engineering**
CGPA (4.22/4.5)
- Aug 2005 - Sep 2009 Balochistan University OF Information Technology Engineering & Management Sciences Quetta,
Bachelor, Telecommunication Engineering
CGPA (3.34/4.0)
- Jan 2003 - Dec 2005 Government Science Collage, Quetta, **FSC, Science (Pre-Engineering)**
- Jan 2002 - Dec 2003 Federal Government Public School, Quetta Cantt, **High School, Science**

RESEARCH GRANTS

European Union Asi@Connect Program (2019-2021) (**Principal Investigator**)
Awarding body: Trans Eurasia International Network (TEIN)
Project Title: Connecting the Unconnected - Internet for Underserved Rural Schools
Total Funding: ~**190,000.00 Euro**

BUTEMS ORIC Competitive Grants (2021~2022) **(Principal Investigator)**
Project Title: Feasibility Study for a GIS-Based Immoveable Urban Property Tax Collection and Management System
Total Funding: ~**1,000,000.00 PKR**

Higher Education Commission - Start-Up Research Grant (2018-2019) **(Principal Investigator)**
Project Title: Energy Harvesting and Ambient Backscatter Enabled Relays for Future IoT Network
Total Funding: ~**412,000.00 PKR**

AREA OF INTEREST

5th Generation Networks
AI-Enabled Next Generation Networks
RF Energy Harvesting
Device-to-Device Communication in LTE-A Networks
Next Generation Moving Cells Networks
Internet-of-Things Network
Block Chain
Cross-layer Design
IEEE 802.11 Networks

LIST OF PUBLICATIONS

SCI(e) Journal and Conference Papers Under Review

- 1 Tahira Mahboob, Jae Won Lim, **Syed Tariq Shah**, and Min Young Chung: "A Novel Deep Learning-enabled QoS management Scheme for Encrypted Traffic in Software-defined Cellular Networks" IEEE Systems Journal, Minor revision submitted, April. 2021.

SCI(e) Journal Papers Published\Accepted

- 2 Danish Mehmood Mughal, **Syed Tariq Shah**, and Min Young Chung: "An Efficient Spectrum Utilization Scheme for Energy-Constrained IoT Devices in Cellular Networks" IEEE Internet of Things Journal, March 2021.
- 3 Daniyal Munir, **Syed Tariq Shah**, Danish Mehmood Mughal, Min Young Chung, "Cooperative Relay Strategy for Backscatter Communication Networks with RF Energy Harvesting" Elsevier- Physical Communication Volume 37, December 2019, 100861
- 4 D. Munir, **Syed Tariq Shah**, K. W. Choi, Tae-Jin Lee, and M. Y. Chung, "Performance Analysis of wireless powered cognitive radio networks with ambient backscatter" EURASIP Journal on Wireless Communications and Networking (1)-45, 2019.
- 5 **Syed Tariq Shah**, K. W. Choi, Tae-Jin Lee, and M. Y. Chung, "Outage Probability and Throughput Analysis of SWIPT Enabled Cognitive Relay Network with Ambient Backscatter", IEEE Internet of Things Journal, vol. 5, no. 4, pp. 3198-3208, Aug. 2018. (doi: 10.1109/JIOT.2018.2837120)
- 6 **Syed Tariq Shah**, Daniel B. da Costa K. W. Choi, and M. Y. Chung, "Optimal Wireless Energy Harvesting and Distribution in Multi-Pair DF Relay Networks" in Journal of Wireless Communications and Mobile Computing, Volume 2018, Article ID 7638215, 14 pages. (doi: 10.1155/2018/7638215)
- 7 Daniyal Munir, **Syed Tariq Shah**, K. W. Choi, and M. Y. Chung, "Information Processing and Wireless Energy Harvesting in Interference Aware Public Safety Networks" Wireless Personal Communications, Springer, June 2018. (doi: 10.1007/s11277-018-5896-x)
- 8 **Syed Tariq Shah**, Young Min Kwon, Minsu Shin, JaeSheung Shin, Ae-Soon Park, "Moving Personal-Cell Network: Characteristics and Performance Evaluation," China Communications, Vol. 15 (12), pp. 159-173, 2018.

- 9 **Syed Tariq Shah**, Jaheon Gu, Syed Faraz Hasan, and Min Young Chung: "SC-FDMA Base-d Resource Allocation and Power Control Scheme for D2D-Communication Using LTE-A Uplink Resource" EURASIP Journal on Wireless Communications and Networking, vol. 2015, no. 137, pp. 1-15, May 2015.
- 10 **Syed Tariq Shah**, Jun Suk Kim, Eun Soo Bae, JungSook Bae, and Min Young Chung: "Radio Resource Management for 5G Mobile Communication Systems with Massive Antenna Structure" Trans. Emerging Tel. Tech., 27: 504– 518.
- 11 **Syed Tariq Shah**, K. W. Choi, S. F. Hasan, and M. Y. Chung, "Energy Harvesting and Information Processing in Two-Way Multiplicative Relay Networks," in Electronics Letters, vol. 52, no. 9, pp. 751-753, April 28, 2016 (doi: 10.1049/el.2015.3682).
- 12 Young Min Kwon, **Syed Tariq Shah**, JaeSheung Shin, Ae-Soon Park, and Min Young Chung, "Performance Evaluation of Moving Small-Cell Network with Proactive Cache," Mobile Information Systems, vol. 2016, Article ID 6013158, 11 pages, July 19, 2016 (doi:10.1155/2016/6013158).
- 13 **Syed Tariq Shah**, K. W. Choi, S. F. Hasan, and M. Y. Chung, "Throughput analysis of two-way relay networks with wireless energy harvesting capabilities," Ad Hoc Networks, 53 (2016): 123-131., ISSN 1570-8705, doi: <http://dx.doi.org/10.1016/j.adhoc.2016.09.024>.
- 14 **Syed Tariq Shah**, Syed Faraz Hasan, Boon-Chong Seet, Peter Han Joo Chong, Min Young Chung, "Device-to-Device Communications: A Contemporary Survey," Wireless Personal Communications, pp.1-38, August 2017 (doi:10.1007/s11277-017-4918-4).

Conference Publications

- 15 Shan Jaffry, **Syed Tariq Shah**, and Syed Faraz Hasan, "Data-driven Unsupervised Anomaly Detection for 5G Networks" in Proc. of IEEE WCNC, 2020.
- 16 Furqan Jameel, **Syed Tariq Shah**, Wali Ullah Khan, Tapani Ristaniemi, "Towards Intelligent IoT Networks: Reinforcement Learning for Reliable Backscatter Communications" in Proc. of IEEE Globecom, 2019.
- 17 **Syed Tariq Shah**, Shan Jaffry, Syeda Kanwal Zaidi, Syed Faraz Hasan, and Xiang Gui, "D2D Neighborhood Discovery by a Mobile Device", in Proc. of 53rd IEEE International Conference on Communications (ICC), 2019.
- 18 Arifa Anwar, **Syed Tariq Shah**, Syed Faraz Hasan, and Dong Ryeol Shin: "SWIPT-Based Three-Step Multiplicative Amplify-and-Forward Two-Way Relay Networks with Non-Linear Energy Conversion Model" in Proc. of 4th IEEE International Conference on Computer and Communications (ICCC), 2018.
- 19 Daniyal Munir, **Syed Tariq Shah**, Danish Mehmood Mughal, Kwang Hyun Park, and Min Young Chung, "Duty Cycle Optimizing for WiFi-based IoT Networks with Energy Harvesting", In Proceedings of the 12th International Conference on Ubiquitous Information Management and Communication (IMCOM '18). ACM, New York, NY, USA, Article 91, 6 pages. (doi: <https://doi.org/10.1145/3164541.3164571>)
- 20 Danish Mughal, **Syed Tariq Shah**, Daniyal Munir, Kwang Hyun Park, and Min Young Chung. "Throughput Analysis of Multi-Antenna Based SWIPT Relay Network", International Conference on Information Networking (ICOIN), 2018, pp. 336-340.
- 21 **Syed Tariq Shah** and Min Young Chung "Throughput Analysis of a SWIPT Enabled Two-Way Decode-and-Forward Cognitive Relay Network" In Proc. International Conference on

Computational Science and Its Applications (ICCSA), Trieste, Italy, Jul 2017

- 22 Danish Mughal, **Syed Tariq Shah**, Daniyal Munir, and Min Young Chung. "Throughput Performance of a SWIPT-Based Multi Antenna DF relay Network," in Proc. Korea Information and Communications Society (KICS) Conference, Summer 2017.
- 23 Daniyal Munir, **Syed Tariq Shah**, Won Jin Lee, and Min Young Chung, "Low-power Backscatter Relay Network" In Proc. ACM International Conference on Ubiquitous Information Management and Communication (IMCOM) Jan. 2017.
- 24 Minsu Shin, **Syed Tariq Shah**, Syed Faraz Hasan, Boon-Chong Seet, Peter Han Joo Chong, Min Young Chung, "Moving Small Cells in Public Safety Networks" in Proc. IEEE International Conference on Information Networking (ICOIN), Da Nang, 2017, pp. 564-568
- 25 Murkaz, R. Hussain, S.F. Hasan, M.Y. Chung, B.-C. Seet, P.H.J. Chong, **Syed Tariq Shah**, S.A. Malik, "Architecture and Protocols for Inter-cell Device-to-Device Communication in 5G Networks," 2016 IEEE 14th Intl Conf on Dependable, Autonomic and Secure Computing, 14th Intl Conf on Pervasive Intelligence and Computing, 2nd Intl Conf on Big Data Intelligence and Computing and Cyber Science and Technology Congress (DASC/PiCom/DataCom/CyberSciTech), Auckland, New Zealand, 2016, pp. 489-492.
- 26 **Syed Tariq Shah**, D. Munir, M. Y. Chung and K. W. Choi, "Information Processing and Wireless Energy Harvesting in Two-Way Amplify-and-Forward Relay Networks," 2016 IEEE 83rd Vehicular Technology Conference (VTC Spring), Nanjing, 2016, pp. 1-5. doi: 10.1109/VTCspring.2016.7504290.
- 27 Daniyal Munir, **Shah Syed Tariq**, Won Jin Lee, and Min Young Chung. "Energy Harvesting for Relay UEs in Public Safety Environment," in Proc. Korea Information and Communications Society (KICS) Conference, Summer 2016.
- 28 Daniyal Munir, **Syed Tariq Shah**, Won Jin Lee, Syed Faraz Hasan, and Min Young Chung, "Selection of Relay UE with Energy Harvesting Capabilities in Public Safety Environment," in Proc. IEEE 30th International Conference on Information Networking, ICOIN 2016.
- 29 Won Jin Lee, **Syed Tariq Shah**, Daniyal Munir, Tae-Jin Lee, and Min Young Chung, "A Mechanism on Energy Harvesting and Data Communications in Wi-Fi Network" In Proc. ACM International Conference on Ubiquitous Information Management and Communication (IMCOM) Jan. 2016.
- 30 Jung Wan Shin, Jun Suk Kim, **Syed Tariq Shah**, J. Bae, and Min Young Chung: "Performance Analysis with Dynamic Beam Control Using Millimeter-wave Band on 5G Mobile Communications" In Proc. ACM International Conference on Ubiquitous Information Management and Communication (ICUIMC) 2015, 6 pages, Jan. 2015.
- 31 Young Min Kwon, **Syed Tariq Shah**, JaeSheung Shin, Ae-Soon Park, and Min Young Chung: "Performance Analysis of Small-Cell Base Station with Cellular and WiFi RATs" In Proc. ACM International Conference on Ubiquitous Information Management and Communication (ICUIMC) 2015, 5 pages, Jan. 2015.
- 32 **Syed Tariq Shah**, Young Min Kwon, JaeSheung Shin, Ae-Soon Park, and Min Young Chung: "Performance analysis of MPCs with varying characteristics in different multi-tier HetNet scenarios" in Proc. 12th IEEE International Bhurban Conference on Applied Sciences & Technology (IBCAST), pp. 607-611, Jan. 2015.
- 33 **Syed Tariq Shah**, Jaheon Gu, Syed Faraz Hasan, and Min Young Chung: "FFR-based Resource Allocation Scheme for Device-to-Device Communication" In Proc. IEEE 3rd Global C-conference on Consumer Electronics (GCCE) 2014, pp. 622-623, Oct. 2014.
- 34 **Syed Tariq Shah**, Rob Lahaye, Syed Ali Abbas Kazmi, Syed Faraz Hasan, and Min Young

Chung “HTCondor System for Running Extensive Simulations Related to D2D Communication” In Proc. IEEE International Conference on ICT Convergence (ICTC) 2014, pp. 283-284, Oct. 2014.

- 35 Syed Ali Abbas Kazmi, **Syed Tariq Shah**, Dong Ryeol Shin, and Syed Faraz Hasan: “Improving voltage stability using DG units” In Proc. IEEE International Conference on ICT Convergence (ICTC) 2014, pp. 159-160, Oct. 2014.

SKILLS

Machine Learning
Convex Optimization
Probability Theory
Python
Matlab- MathWorks
LaTex
Nemo Outdoor-Tems 8.2
MS Office - Microsoft Office (Word, Excel, Power Point)

Thesis Supervised

Public Blockchain Based e-Voting– Funded by ORIC, BUIITEMS
Wireless energy Transfer – Funded by National Information & Communication Technology (ICT) Research and Development NICT
IoT Based Smart Home/Office – Funded by National Information & Communication Technology (ICT) Research and Development NICT

Thesis worked out

Simultaneous Wireless Information and Power Transfer (SWIPT) in Energy Constrained Relay Networks, 2018.

SC-FDMA Based Resource Allocation and Power Control in Device-to-Device Communication Underlying LTE-A Networks, 2015.

Voice Compression Using Wavelet Transform Technique in MATLAB, 2008.

Professional Affiliations

Memberships and Societies
Member of Pakistan Engineering Council (PEC)
Member of IEEE

Affiliation
NTL, IEEE, ERC, ACM

Reference

References will be provided upon request.


06/05/21