

Biographical Sketch

Name: Zubair Md. Fadlullah

Date of birth: November 06, 1980

Nationality: Bangladeshi

Education:

03/2011: PhD in Applied Information Science, Graduate School of Information Sciences (GSIS), Tohoku University, Sendai, Japan

03/2008: MSc in Applied Information Science, GSIS, Tohoku University, Sendai, Japan

10/2003: BSc (Hons) in Computer Science & IT (CIT) with Magna Cum Laude, CGPA: 4.89/5.00, Islamic University of Technology (IUT), Gazipur, Bangladesh

Work Experience:

04/2017-Present: Associate Professor, Graduate School of Information Sciences (GSIS), Tohoku University, Sendai, Japan

04/2011-03/2017: Assistant Professor, Graduate School of Information Sciences (GSIS), Tohoku University, Sendai, Japan

12/2003-03/2005: Lecturer, Department of Computer Science & Information Technology (CIT), IUT, Gazipur, Bangladesh

Awards and Achievements:

09/2016: Best paper award, IEEE IC-NIDC Conference , Beijing China

03/2016: NEC Tokin Foundation Research Encouragement Award

12/2015: IEEE Asia-Pacific Outstanding Young Researcher Award

12/2014: Best paper award, IEEE Globecom'14, Austin, Texas, USA

(Awards continued)

06/2014: Appreciation Certificate as Symposium Chair from IEEE Communication Society (ComSoc), IEEE ICC'14, Sydney, Australia

09/2013: Promoted to IEEE Senior Member

05/2013: Meritorious Service Certificate as “Top Quality Reviewer” awarded by IEEE Transactions on Parallel & Distributed Systems (TPDS)

03/2011: President’s Award for outstanding performance, Tohoku University, Japan

03/2011: Dean’s Award, Graduate School of Information Science, Tohoku University, Japan

06/2009: Best paper award, ACM IWCMC Conference, Leipzig, Germany

06/2007: IEEE Students’ Travel Grant to attend ICC’06 in Glasgow, Scotland

Funding (Selected)

06/2017: Wakate A Research Fund from Japanese Ministry of Culture and Science (for three years)

04/2013: Young Scientist’s (Wakate B) Research Fund from Japanese Ministry of Culture and Science (for three years)

11/2011: Young Researcher’s Startup Fund from Japanese Ministry of Culture and Science (for two years)

Academic Activities (Selected)

2014 – Present: Associate Editor, IEEE Internet of Things (IoT) Journal, 2014-Present

2012-2015: Editor, Ad Hoc & Sensor Wireless Networks (AHSWN), 2012-2015

06/2014: TPC Co-Chair, AHSN track, IEEE ICC’14

2012 – 2013: Co-Editor of book, “Building Next-Generation Converged Networks: Theory and Practice”, published by CRC Press 2012/2013

2011 – 2012: Associate Editor, International Journal on Internet and Distributed Computing Systems (IJIDCS)

(Academic Activities (Selected) (continued))

2012: Co-Editor, Special Issue on Wireless Network Intrusion in Journal of Computer and System Sciences, Elsevier

2011: Co-chair, Int'l Conf. on Wireless Commun. & Signal Processing (WCSP'11) – Invited Session on Smart Grid 2011

Publications

Refereed Journals

1. Zubair Md. Fadlullah, Yuichi Kawamoto, Hiroki Nishiyama, Nei Kato, Naoto Egashira, Kazuto Yano, and Tomoaki Kumagai, "Multi-hop Wireless Transmission in Multi-band WLAN Systems: Proposal and Future Perspective," IEEE Wireless Communications Magazine (WCM), conditionally accepted, May 2017.
2. Zubair Md. Fadlullah, Fengxiao Tang, Bomin Mao, Nei Kato, Osamu Akashi, Takeru Inoue, and Kimihiro Mizutani, "State-of-the-Art Deep Learning: Evolving Machine Intelligence Toward Tomorrow's Intelligent Network Traffic Control Systems," IEEE Communications Surveys and Tutorials, Accepted.
3. Shikhar Verma, Yuichi Kawamoto, Zubair Md. Fadlullah, Hiroki Nishiyama and Nei Kato, "A Survey on Network Methodologies for Real-Time Analytics of Massive IoT Data and Open Research Issues," IEEE Communications Surveys and Tutorials.
DOI : 10.1109/COMST.2017.2694469.
4. Nei Kato, Zubair Md. Fadlullah, Bomin Mao, Fengxiao Tang, Osamu Akashi, Takeru Inoue, and Kimihiro Mizutani, "The Deep Learning Vision for Heterogeneous Network Traffic Control – Proposal, Challenges, and Future Perspective –," IEEE Wireless Communications (WCM).
DOI : 10.1109/MWC.2016.1600317WC.
5. Zubair Md. Fadlullah, Chao Wei, Zhiguo Shi, and Nei Kato, "GT-QoSec: A Game-Theoretic Joint Optimization of QoS and Security for Differentiated Services in Next Generation Heterogeneous Networks," IEEE Transactions on Wireless Communications (TWC), vol.16, no. 2, pp.1037-1050, Feb. 2017.
6. Hongzhi Guo, Jiajia Liu, Zubair Md. Fadlullah, and Nei Kato, "On Minimizing Energy Consumption in FiWi Enhanced LTE-A HetNets", IEEE Transactions on Emerging Topics in Computing (TETC), Aug. 2016, DOI: 10.1109/TETC.2016.2598478.
7. Jiajia Liu, Hongzhi Guo, Zubair Md. Fadlullah, and Nei Kato, "Energy Consumption Minimization for FiWi Enhanced LTE-A HetNets with UE Connection Constraint," IEEE Communications Magazine, Special Issue on 5G RAN, vol. 54, no. 11, pp. 56 - 62, Nov. 2016.
8. Zubair Md. Fadlullah, Wei Chao, Zhiguo Shi, and Nei Kato, "Joint Optimization of QoS and Security for Differentiated Applications in Heterogeneous Networks," IEEE Wireless Communications Magazine, vol. 23, no. 3, pp. 74-81, Jan. 2016.
9. Keisuke Miyabe, Katsuya Suto, Zubair Md Fadlullah, Hiroki Nishiyama, Nei Kato, Hirotaka Ujikawa, and Ken-ichi Suzuki, "A Cloud Radio Access Network with Power Over Fiber Toward 5G Network: QoE-Guaranteed Design and Operation," IEEE Wireless Communications, to appear.
10. Zubair Md Fadlullah, Daisuke Takaishi, Hiroki Nishiyama, Nei Kato, and Ryu Miura, "A Dynamic Trajectory Control Algorithm for Improving the Communication Throughput and Delay in UAV-aided Networks," IEEE Network Magazine, to appear.
11. Wei Zhao, Hiroki Nishiyama, Zubair Md Fadlullah, Nei Kato, and Kiyoshi Hamaguchi, "DAPA:

- Capacity Optimization in Wireless Networks through a Combined Design of Density of Access Points and Partially Overlapped Channel Allocation," *IEEE Transactions on Vehicular Technology*, to appear.
12. Toshikazu Sakano, Satoshi Kotabe, Tetsuro Komukai, Tomoaki Kumagai, Yoshitaka Shimizu, Atsushi Takahara, Thuan Ngo, Zubair Md Fadlullah, Hiroki Nishiyama, and Nei Kato, "Bringing Movable and Deployable Networks to Disaster Areas: Development and Field Test of MDRU," *IEEE Network Magazine*, to appear.
 13. Ahmed E.A.A. Abdulla, Zubair Md Fadlullah, Hiroki Nishiyama, Nei Kato, Fumie Ono, and Ryu Miura, "Towards Fair Maximization of Energy Efficiency in Multiple UAS-aided Networks: A Game-Theoretic Methodology," *IEEE Transactions on Wireless Communications*, vol. 14, no. 1, Jan. 2015, pp. 305-316.
 14. Chao Wei, Zubair Md Fadlullah, Nei Kato and Akira Takeuchi, "GT-CFS: A Game Theoretic Coalition Formulation Strategy for Reducing Power Loss in Micro Grids," *IEEE Transactions on Parallel and Distributed Systems*, vol. 25, no. 9, pp. 2307-2317, Sep. 2014.
 15. Shintaro Arai, Zubair Md Fadlullah, Thuan Ngo, Hiroki Nishiyama, and Nei Kato, "An Efficient Method for Minimizing Energy Consumption of User Equipment in Storage-Embedded Heterogeneous Networks," *IEEE Wireless Communications*, vol. 21, no. 4, pp. 70-76, Aug. 2014.
 16. Chao Wei, Zubair Md Fadlullah, Nei Kato, and Ivan Stojmenovic, "On Optimally Reducing Power Loss in Micro-Grids with Power Storage Devices," *IEEE Journal on Selected Areas in Communications (JSAC)*, vol. 32, no. 7, pp. 1361-1370, Jul. 2014.
 17. Yuichi Kawamoto, Zubair Md Fadlullah, Hiroki Nishiyama, Nei Kato, and Morio Toyoshima, "Prospects and Challenges of Context-aware Multimedia Content Delivery in Cooperative Satellite and Terrestrial Networks," *IEEE Communications Magazine*, vol. 52, no. 6, pp. 55-61, Jun. 2014.
 18. Zubair Md Fadlullah, Minh Quan Duong, Nei kato, and Ivan Stojmenovic, "GTES: An Optimized Game-Theoretic Demand-Side Management Scheme for Smart Grid," *IEEE Systems Journal*, vol. 8, no. 2, pp. 588-597, Jun. 2014.
 19. Hiroki Nishiyama, Desmond Fomo, Zubair Md Fadlullah, and Nei Kato, "Traffic Pattern Based Content Leakage Detection for Trusted Content Delivery Networks," *IEEE Transactions on Parallel and Distributed Systems*, vol. 25, no. 2, pp. 301-309, Feb. 2014.
 20. Zubair Md Fadlullah, Hiroki Nishiyama, Yuichi Kawamoto, Hirotaka Ujikawa, Kenichi Suzuki, and Naoto Yoshimoto, "Cooperative QoS Control Scheme based on Scheduling Information in FiWi Access Network," *IEEE Transactions on Emerging Topics in Computing (TETC)*, vol. 1, no. 2, pp. 375-383, Dec. 2013.
 21. Yuichi Kawamoto, Hiroki Nishiyama, Zubair Md Fadlullah, and Nei Kato, "Effective Data Collection via Satellite-Routed Sensor System (SRSS) to Realize Global-Scaled Internet of Things," *IEEE Sensors Journal*, vol. 13, no. 10, pp. 3645-3654, Oct. 2013.
 22. Toshikazu Sakano, Zubair Md Fadlullah, Thuan Ngo, Hiroki Nishiyama, Masataka Nakazawa, Fumiyuki Adachi, Nei Kato, Atsushi Takahara, Tomoaki Kumagai, Hiromichi Kasahara, and Shigeki Kurihara, "Disaster-Resilient Networking: A New Vision Based on Movable and Deployable Resource Units," *IEEE Network Magazine*, vol. 27, no. 4, pp. 40-46, Jul.-Aug. 2013.
 23. Zubair Md Fadlullah, Hiroki Nishiyama, Nei Kato, and Mostafa M. Fouda, "Intrusion Detection System (IDS) for Combating Attacks Against Cognitive Radio Networks," *IEEE Network Magazine*, vol. 27, no. 3, pp. 51-56, May-Jun. 2013.
 24. Zubair Md Fadlullah, Hiroki Nishiyama, Nei Kato, Hirotaka Ujikawa, Kenichi Suzuki, and Naoto Yoshimoto, "Smart FiWi Networks: Challenges and Solutions for QoS and Green Communications," *IEEE Intelligent Systems* vol. 28, no. 2, pp. 86-91, Mar.-Apr. 2013.
 25. Mostafa M. Fouda, Zubair Md Fadlullah, Mohsen Guizani, and Nei Kato, "A Novel P2P VoD Streaming Technique Integrating Localization and Congestion Awareness Strategies," *Springer Mobile Networks and Applications (MONET)*, vol. 17, no. 5, pp. 594-603, Oct. 2012.
 26. Zubair Md Fadlullah, Nei Kato, Rongxing Lu, Xuemin (Sherman) Shen, and Yousuke Nozaki, "Toward Secure Targeted Broadcast in Smart Grid," *IEEE Communications Magazine*,

- vol. 50, no. 5, pp. 150-156, May 2012.
27. Pedro B. F. Duarte, Zubair Md Fadlullah, Athanasios V. Vasilakos, and Nei Kato, "On the Partially Overlapped Channel Assignment on Wireless Mesh Network Backbone: A Game Theoretic Approach," *IEEE Journal on Selected Areas in Communications*, vol. 30, no. 1, pp. 119-127, Jan. 2012.
 28. Mostafa M. Fouda, Zubair Md Fadlullah, Nei Kato, Rongxing Lu, and Xuemin (Sherman) Shen, "A Lightweight Message Authentication Scheme for Smart Grid Communications," *IEEE Transactions on Smart Grid*, vol. 2, no. 4, pp. 675-685, Dec. 2011.
 29. Qing Chen, Zubair Md Fadlullah, Xiaodong Lin, and Nei Kato, "A Clique-based Secure Admission Control Scheme for Mobile Ad hoc Networks (MANETs)," *Journal of Network and Computer Applications*, vol. 34, no. 6, pp. 1827-1835, Nov. 2011.
 30. Hidehisa Nakayama, Zubair Md Fadlullah, Nirwan Ansari, and Nei Kato, "A Novel Scheme for WSAK Sink Mobility based on Clustering and Set Packing Techniques," *IEEE Transactions on Automatic Control*, vol. 56, no. 10, pp. 2381-2389, Oct. 2011.
 31. Zubair Md Fadlullah, Mostafa M. Fouda, Xuemin (Sherman) Shen, Yousuke Nozaki, and Nei Kato, "An Early Warning System Against Malicious Activities for Smart Grid Communications," *IEEE Network Magazine*, vol. 25, no. 5, pp. 50-55, Sep.-Oct. 2011.
 32. Zubair Md Fadlullah, Mostafa M. Fouda, Nei Kato, Akira Takeuchi, Noboru Iwasaki, and Yousuke Nozaki, "Toward Intelligent Machine-to-Machine Communications in Smart Grid," *IEEE Communications Magazine*, vol. 49, no. 4, pp. 60-65, Apr. 2011. (The article was amongst the top ten downloaded articles in IEEE Communications Society (ComSoc) in April (reference) and May (reference), 2011. Also, the article was listed in the top 100 downloaded articles in IEEE Xplore for several months up to August 2011 (reference). The article has also been cited over 277 times by other researchers according to Google Scholar, last accessed in Sep. 2015.)
 33. Hiroki Nishiyama, Zubair Md Fadlullah, and Nei Kato, "Inter-Layer Fairness Problem in TCP Bandwidth Sharing in 10G-EPON," *IEEE Systems Journal*, vol. 4, no. 4, pp. 432-439, Dec. 2010.
 34. Zubair Md Fadlullah, Tarik Taleb, Athanasios Vasilakos, Mohsen Guizani, and Nei Kato, "DTRAB: Combating Against Attacks on Encrypted Protocols Through Traffic-Feature Analysis," *IEEE/ACM Transactions on Networking*, vol. 18, no. 4, pp. 1234-1247, Aug. 2010.

Peer-reviewed International Conferences

1. Shucong Jia, Zubair Md. Fadlullah, Nei Kato, and Lin Zhang, "Eco-Udc: An Energy Efficient Data Collection Method For Disaster Area Networks," 2016 5th IEEE International Conference on Network Infrastructure and Digital Content (IEEE IC-NIDC 2016), Beijing, China, Sept. 2016.
2. Shucong Jia, Zishan Liu, Konglin Zhu, Lin Zhang, Zubair Md Fadlullah, and Nei Kato, "Bus-Ads: Bus-based Pricing Advertising in VANETs using Coalition Formation Game," IEEE International Conference on Communications (ICC 2015), London, UK, Jun. 2015.
3. Jie Yang, Xinyu Zhang, Yuanyuan Qiao, Zubair Md Fadlullah, and Nei Kato, "Global and Individual Mobility Pattern Discovery Based on Hotspots," IEEE International Conference on Communications (ICC 2015), London, UK, Jun. 2015.
4. Jie Yang, Weicheng Li, Yuanyuan Qiao, Zubair Md Fadlullah, and Nei Kato, "Characterizing and Modeling of Large-Scale Traffic in Mobile Network," IEEE Wireless Communications and Networking Conference (WCNC 2015), New Orleans, USA, Mar. 2015.
5. Wei Zhao, Zubair Md Fadlullah, Hiroki Nishiyama, Nei Kato, and Kiyoshi Hamaguchi, "On Joint Optimal Placement of Access Points and Partially Overlapping Channel Assignment for Wireless Networks," IEEE Global Communications Conference (GLOBECOM 2014), Austin, Texas, USA, Dec. 2014.
6. Wei Chao, Zubair Md Fadlullah, Nei Kato, and Ivan Stojmenovic, "A Novel Distributed

- Algorithm for Power Loss Minimizing in Smart Grid," 2014 IEEE International Conference on Smart Grid Communications, Venice, Italy, Nov. 2014.
7. Wei Zhao, Zubair Md Fadlullah, Hiroki Nishiyama, Nei Kato, and Kiyoshi Hamaguchi, "Joint Design of Density of Access Points and Partially Overlapped Channel Assignment for Capacity Optimization in Wireless Networks," 2014 International Conference on Wireless Communications and Signal Processing (WCSP 2014), Hefei, China. Oct. 2014.
 8. Ahmed E.A.A. Abdulla, Zubair Md Fadlullah, Hiroki Nishiyama, Nei Kato, Fumie Ono, and Ryu Miura, "An Optimal Data Collection Technique for Improved Utility in UAS-aided Networks," The 33rd Annual IEEE International Conference on Computer Communications (INFOCOM 2014), Toronto, Canada, May. 2014.
 9. Wei Zhao, Zubair Md Fadlullah, Hiroki Nishiyama, and Nei Kato, "Characterizing the Impact of Non-Uniform Deployment of APs on Network Performance under Partially Overlapped Channels," The 8th International Conference on Wireless Algorithms, Systems, and Applications (WASA 2013), Zhangjiajie, China, Aug. 2013.
 10. Zubair Md Fadlullah, Minh Quan Duong, Nei Kato, and Ivan Stojmenovic, "A Novel Game-based Demand Side Management Scheme for Smart Grid," IEEE Wireless Communications and Networking Conference (WCNC 2013), Shanghai, China, Apr. 2013.
 11. Ahmed E.A.A. Abdulla, Zubair Md Fadlullah, Hiroki Nishiyama, and Nei Kato, "On the Optimal Transmission Distance for Power-aware Routing in Ad hoc Networks," International Conference on Computing, Networking and Communications, Wireless Ad Hoc and Sensor Networks Symposium (ICNC 2013 - WAHS), San Diego, USA, Jan. 2013.
 12. Mostafa M. Fouda, Zubair Md Fadlullah, Nei Kato, Akira Takeuchi, and Yousuke Nozaki, "A Novel Demand Control Policy for Improving Quality of Power Usage in Smart Grid," IEEE Global Communications Conference (GLOBECOM 2012), Anaheim, California, USA, Dec. 2012.
 13. Zubair Md Fadlullah, Athanasios V. Vasilakos, and Nei Kato, "A Game Theoretic Approach to Integrate Security with Quality of Service," IEEE International Conference on Communications (ICC 2012), Ottawa, Canada, Jun. 2012.
 14. Zubair Md Fadlullah, Yousuke Nozaki, Akira Takeuchi, and Nei Kato, "A Survey of Game Theoretic Approaches in Smart Grid," International Conference on Wireless Communications and Signal Processing (WCSP 2011), Nanjing, China, Nov. 2011.
 15. Mostafa M. Fouda, Zubair Md Fadlullah, Nei Kato, Rongxing Lu, and Xuemin (Sherman) Shen, "Towards a Light-weight Message Authentication Mechanism Tailored for Smart Grid Communications," 30th IEEE International Conference on Computer Communications (INFOCOM 2011), Security in Computers, Networking and Communications (SCNC) Workshop, Shanghai, China, pp. 1018-1023, Apr. 2011.
 16. Pedro B. F. Duarte, Zubair Md Fadlullah, Athanasios V. Vasilakos, and Nei Kato, "Channel Assignment on Wireless Mesh Network Backbone with Potential Game Approach," 2nd International ICST Conference on Game Theory for Networks (GameNets 2011), Shanghai, China, pp. 43-56, Apr. 2011.
 17. Pedro B. F. Duarte, Zubair Md Fadlullah, Kazuo Hashimoto, and Nei Kato, "Partially Overlapped Channel Assignment on Wireless Mesh Network Backbone," IEEE Global Communications Conference (GLOBECOM 2010), Miami, Florida, USA, 5 pages, Dec. 2010.
 18. Mostafa M. Fouda, Zubair Md Fadlullah, and Nei Kato, "Assessing Attack Threat Against ZigBee-based Home Area Network for Smart Grid Communications," 6th IEEE International Conference on Computer Engineering and Systems (ICCES 2010), Cairo, Egypt, pp. 245-250, Nov. 2010.
 19. Zubair Md Fadlullah, Tarik Taleb, Nidal Nasser, and Nei Kato, "Exploring the Security Requirements for Quality of Service in Combined Wired and Wireless Networks," International Wireless Communications and Mobile Computing Conference (IWCMC 2009), Leipzig, Germany, Jun. 2009.

20. Tarik Taleb, Zubair Md Fadlullah, Tetsuya Takahashi, Ruhai Wang, Yoshiaki Nemoto, and Nei Kato, "Tailoring ELB for Multi-layered Satellite Networks," IEEE International Conference on Communications 2009 (ICC 2009), Dresden, Germany, Jun. 2009.
21. Tarik Taleb, Zubair Md Fadlullah, Kazuo Hashimoto, Yoshiaki Nemoto, and Nei Kato, "Tracing-back Attacks Against Encrypted Protocols," International Wireless Communications and Mobile Computing Conference 2007 (IWCMC 2007), Hawaii, USA, Aug. 2007.
22. Zubair Md Fadlullah, Tarik Taleb, Nirwan Ansari, Yutaka Miyake, Kazuo Hashimoto, Yoshiaki Nemoto, and Nei Kato, "Combating Attacks Against Encrypted Protocol," IEEE International Conference on Communications (ICC 2007), Glasgow, Scotland, Jun. 2007.

Technical Report (reviewed)

23. Juan Carlos Fernandez, Zubair Md Fadlullah, and Nei Kato, "A Secure and Robust Framework of Service Level Specification for Next Generation Wireless Networks," Technical Report of IEICE, Vol. 108, No. 252, USN2008-52, pp. 83-88, Okinawa, Japan, Oct. 2008.

Book and Book Chapters

1. Zubair Md Fadlullah and Nei Kato, "Evolution of Smart Grids," Springer brief series, to appear.
2. Zubair Md Fadlullah, Tarik Taleb, and Nei Kato "Intrusion Prevention Outlines," in "Security in Computing and Networking Systems: The State-of-the-Art", Editors: William McQuay and Waleed W. Smari, to appear.
3. Mostafa M. Fouda, Zubair Md Fadlullah, Al-Sakib Pathan, and Nei Kato, "Peer-to-Peer Video-On-Demand in Future Internet," in Building Next-Generation Converged Networks: Theory and Practice, pp. 119-134, Editors A-S. K. Pathan, M. M. Monowar, and Z. M. Fadlullah, CRC Press, Jan. 2013. (ISBN: 978-1466507616).