

DR. S. M. KAMRUZZAMAN

Assistant Professor, Department of Software Engineering
College of Computer and Information Sciences
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Google Scholar: <https://scholar.google.com/citations?user=NTEOFkYAAAAJ&hl=en&oi=ao>

EDUCATION

PhD in Electronics and Information Engineering

February 2012

- College of Engineering, Hankuk University of Foreign Studies (HUFS), South Korea
- Thesis: Design of a Routing Protocol for Cognitive Radio Ad Hoc Networks

Master of Computer Science and Engineering

March 2005

- Department of Computer Science and Engineering, Bangladesh University of Engineering and Technology
- Thesis: An Algorithm to Extract Rules from Artificial Neural Networks

Bachelor of Electrical and Electronic Engineering

July 1997

- Department of Electrical and Electronic Engineering, Dhaka University of Engineering and Technology
- Thesis: Computer Aided Optimal Generation Scheduling by Lagrangian Method

RESEARCH INTERESTS

- Wireless communications systems/protocols
- MAC and Routing protocols for wireless networks
- Cognitive radio ad-hoc and sensor networks
- Radio resource management
- Performance evaluation of wireless communications protocols
- Rule extraction from neural networks
- Artificial intelligence and data mining

PROFESSIONAL EXPERIENCE

Position Held

- Assistant Professor, Department of Software Engineering, College of Computer and Information Sciences, King Saud University, Riyadh 11543, Kingdom of Saudi Arabia. May 1, 2013 – Present
- Associate Professor, Department of Information & Communication Engineering, University of Rajshahi, Rajshahi-6205, Bangladesh. Nov. 2012 – Apr. 2013
- Assistant Professor, Department of Information & Communication Engineering, University of Rajshahi, Rajshahi-6205, Bangladesh. Aug. 2006 – Nov. 2012
- Teaching and Research Assistant, Department of Electronics Engineering, Hankuk University of Foreign Studies, Yongin-si, Gyeonggi-do, Korea. Aug. 2007 – Dec. 2011
- Assistant Professor, Department of Computer Science & Engineering, Manarat International University, Gulshan-2, Dhaka-1212, Bangladesh. Jan. 2005 – Jul. 2006
- Lecturer and Assistant Professor, Department of Computer Science & Engineering, International Islamic University Chittagong, Bangladesh. Mar. 1998 – Dec. 2004

Awards, Scholarships and Grants

- President Scholarship for all expenses during the Ph.D. studies, Hankuk University of Foreign Studies, Korea, 2007-2011
- Merit Scholarship during the B.Sc. Engineering studies, Dhaka University of Engineering and Technology, 1993-1997
- Merit Scholarship during the Diploma Engineering studies, Bangladesh Technical Education Board, 1990-1992
- Secured 5th place in the central merit list of Electrical Technology in the Diploma Engineering Examination, 1993
- Hankuk University of Foreign Studies Travel Grant to attend IEEE International Conference on Communications, Japan, 2011

Student Advising and Project Supervision (Summary: MS Thesis –2, BS Project–18)

- At the College of Computer and Information Sciences, KSU, Riyadh, KSA Sep. 2013– Present
 - MS Thesis 3: *Indoor location tracking and Navigation System for Firefighters*
 - MS Thesis 2: *Interaction with Public Displays through Smart Phones*
 - BS Project 19: *Disaster Information Management System*
 - BS Project 18: *Cloud-based Backup Service to Android Users*
 - BS Project 17: *Health Monitoring System for Epilepsy Patients*
- At the Department of Information and Communication Engineering, University of Rajshahi, Bangladesh Aug. 2006 – Apr. 2013
 - MS Thesis 1: *Performance Analysis of Pulse Shaping Technique for OFDM Peak to Average Power Ratio (PAPR) Reduction* Aug. 2006– Aug. 2007
 - BS Project 16: *Study of Various Routing Protocols in Vehicular Ad-hoc Networks* May. 2012 – Apr. 2013
 - BS Project 15: *Study of Smart Home: An Application of Smart Grid*
- At the Department of Computer Science & Engineering, Manarat International University, Dhaka, Bangladesh Jul. 2005 – Jun. 2006
 - BS Project 14: *A Hardware-Software Co-Method for Low Cost EPROM Programmer*
 - BS Project 13: *Comparison of Various Routing Protocols in Mobile Ad-Hoc Networks*
 - BS Project 12: *Bengali License Plate Recognition using Artificial Neural Networks*
 - BS Project 11: *Continuous Data Compression with Neural Network*
 - BS Project 10: *An approach to Detect Malapropism for Bangla Spell Checker*
- At the Department of Computer Science & Engineering, International Islamic University Chittagong, Bangladesh Jul. 2005 – Jun. 2006
 - BS Project 9: *Rotation Invariant Face Detection using Wavelet, PCA and Radial Basis Function Networks*
 - BS Project 8: *Automatic Categorization of Paper Abstracts for Conference Management*
- At the Department of Computer Science & Engineering, International Islamic University Chittagong Jul. 2003 – Dec. 2004
 - BS Project 7: *Medical Diagnosis using Neural Networks* Jul. 2003 – Jun. 2004
 - BS Project 6: *Text Classification using Association Rule with a Hybrid Concept of Naïve Bayes Classifier and Genetic Algorithm*
 - BS Project 5: *Optimal Bangla Keyboard Layout using Data Mining Association Rule*
 - BS Project 4: *Speech Recognition using MFCC-domain Support Vector Machine* Jan. 2004 – Dec. 2004
 - BS Project 3: *An Efficient Technique for Text Compression*
 - BS Project 2: *An Enhanced Cell Phone Keypad Layout*
 - BS Project 1: *Web Page Classification using Artificial Neural Networks with Automatic Feature Extraction*

Conference Organization/Reviewer

- Member, TPC, International Conference on Informatics, Electronics & Vision (ICIEV' 12, '13 and '14), *co-sponsored by the IEEE*
- IEEE International Conference on Communications (IEEE ICC'15)
- IEEE Wireless Communications and Networking Conference (IEEE WCNC'13)
- The 20th International Conference on Software, Telecommunications and Computer Networks (SoftCOM'12)
- The First International Conference on Communications, Signal Processing, and their Applications (ICCSA'13)

Technical Presentations (last 5 years)

- International Conference on ICT Convergence 2014, Busan, Korea, 22-24 October 2014.
- IEEE International Conference on Communications (ICC-2011), Kyoto, Japan, 5-9 June 2011.
- 13th IEEE International Conference on Advanced Communication Technology, Phoenix Park, Korea, 13-16 February 2011.

Reviewer of Technical Papers

- IEEE Communications Letters, *ISI Journal*
- Computer Networks (Elsevier), *ISI Journal*
- Computer Communications (Elsevier), *ISI Journal*
- Ad Hoc & Sensor Wireless Networks, *ISI Journal*
- KSII Transactions on Internet and Information Systems, *ISI Journal*
- Computer Science and Information Systems, *ISI Journal*
- China Communications, *ISI Journal*
- IET Networks

Professional Memberships

- Member, Institute of Electrical and Electronics Engineers (IEEE), M-91218122
- Member, IEEE Communications Society
- Member, IEEE Vehicular Technology Society
- Life Fellow, The Institution of Engineers Bangladesh (IEB) F-9946
- Member, Korean Society for Internet Information (KSII)
- Member, Bangladesh Academy for Advancement of Science
- Member, Bangladesh Computer Society

SIGNIFICANT PERFORMANCE AND LEADERSHIP

Projects Involved

- *Energy Efficient Multipath Routing Protocol for Cognitive Radio Ad Hoc Networks*, Apr. 2014- Present
Funding Body: Research Center (RC), College of Computer and Information Sciences, King Saud University, Riyadh, KSA
- *Secure Anonymous Routing Scheme for Cognitive Radio Ad Hoc Networks*, Apr. 2014- Present
Funding Body: Research Center (RC), College of Computer and Information Sciences, King Saud University, Riyadh, KSA
- *Modeling and Simulation of Command, Control, Communications, Computers and Intelligence (C4I) Testbed*, Mar. 2014- Present
Funding Body: The National Plan for Sciences & Technology (NPST), KSA
- *Development of Etiquette for Cognitive Radio Coexistence in Heterogeneous Systems*, Jun. 2010 –Jan. 2011
Funding Body: Electronics and Telecommunications Research Institute (ETRI), Korea
- *Awareness and Cooperation in Dynamic Spectrum Allocation and Sharing*, Jul. 2008–Jun. 2010
Funding Body: Korea Research Foundation, Korea
- *Development of TV Multi-Band Radio Resource Management Scheme for Coexistence*, Apr. 2009–Oct. 2009
Funding Body: ETRI, Korea
- *Cognitive Radio Technologies, Mobile/Wireless Communication Network Protocol and Algorithm Research*, Sept. 2007- Jun. 2008
Funding Body: Korea Research Foundation, Korea

Leadership/Institutional Activities

- Member, KSU Quality Management System, Dept. of Software Engineering, College of Computer and Information Sciences, King Saud University, KSA Nov. 2014 – Present
- Member, Graduate Studies and Research Committee, Dept. of Software Engineering, College of Computer and Information Sciences, King Saud University, KSA Dec. 2013-Aug. 2014
- Chairman (in-charge), Dept. of Information & Communication Engineering (ICE), University of Rajshahi, Bangladesh May 2012–June 2012
- Chairman, M.Sc. (Final Year) Examination Committee 2010, Department of ICE, University of Rajshahi, Bangladesh Mar. 2012– Oct. 2012
- Head, Department of Computer Science & Engineering, Manarat International University, Bangladesh Jan. 2005 – Jul. 2006
- Member, Academic Council, Manarat International University, Bangladesh Jan. 2005 – Jul. 2006
- Convener, Curriculum Development and Review Committee for Electronics & Communications Engineering and Computer Science & Engineering (CSE), Manarat International University Jan. 2005 – Jul. 2006
- Examiner, National University, Gazipur, Bangladesh Jan. 2005 – Jul. 2006
- Convener, Students Thesis Committee, Department of CSE, International Islamic University Chittagong (IIUC), Bangladesh May 2003–Dec. 2004
- Head, Department of CSE, International Islamic University Chittagong, Dhaka Campus Oct. 2000–Apr. 2003
- Warden, Hostel-2, International Islamic University Chittagong, Bangladesh. Mar. 1999–Apr. 2000
- Member Secretary, Curriculum Development and Review Committee for Electronics & Communications Engineering, and Computer Science & Engineering, IIUC, Bangladesh Mar. 1998 – Apr. 2000

Selected Publications (Summary: Book Chapter–1, Journals–16, Conferences–19)

- B1. **S. M. Kamruzzaman**, Abdullah Alghamdi, and M. Anwar Hossain, “Cognitive radio networks: Concepts and applications,” *Opportunistic Networking: Vehicular, D2D and Cognitive Radio Networks*, CRC Press, Accepted in April 2014.
- J1. Mohammad Mehedi Hassan, **S. M. Kamruzzaman**, Atif Alamri, Ahmad Almogren, Abdulhameed Al-Elaiwi, Mohammed Alnuem, Md. Manowarul Islam and Md. Abdur Razzaque, “Design of an energy-efficient and reliable data delivery mechanism for mobile ad hoc networks: a cross layer approach,” *Concurrency and Computation: Practice and Experience (Wiley)*, first published online in 4 July 2014 (ISI Journal, IF: 0.784).
- J2. **S. M. Kamruzzaman**, Abdullah Alghamdi, Abdulhameed Alelaiwi, and Mohammad Mehedi Hassan, “Channel-slot aggregation diversity based slot reservation scheme for cognitive radio ad hoc networks,” *International Journal of Distributed Sensor Networks*, vol. 2014 (2014), Article ID 382414, 13 pages, February 2014 (ISI Journal, IF: 0.923).
- J3. **S. M. Kamruzzaman**, Eunhee Kim, Dong Geun Jeong, and Wha Sook Jeon, “Energy-aware routing protocol for cognitive radio ad hoc networks,” *IET Communications*, vol. 6, no. 14, pp. 2159–2168, September 2012 (ISI Journal, IF: 0.72).
- J4. **S. M. Kamruzzaman**, Md. Abdul Hamid, and A. M. Jehad Sarkar, “ERANN: An algorithm to extract symbolic rules from trained artificial neural networks,” *IETE Journal of Research*, vol. 58, no. 2, pp. 138–154, March-April 2012 (ISI Journal, IF: 0.189).
- J5. **S. M. Kamruzzaman**, and Md. Abdul Hamid, “An energy efficient multichannel MAC protocol for QoS provisioning in MANETs,” *KSII Transactions on Internet and Information Systems*, vol. 5, no. 4, pp. 684–702, April 2011 (ISI Journal, IF: 0.345).
- J6. **S. M. Kamruzzaman**, Md. Abdul Hamid, and M. Abdullah-Al-Wadud “An energy efficient MAC protocol for QoS provisioning in cognitive radio ad hoc networks,” *Radioengineering (special issue on cognitive radio communications and software defined radio)*, vol. 19, no. 4, pp. 567–578, December 2010 (ISI, IF: 0.796).
- J7. **S. M. Kamruzzaman**, and A. M. Jehad Sarkar “A new data mining scheme using artificial neural networks,” *Sensors*, vol. 11, no. 5, pp. 4622–4647, May 2011 (ISI Journal, IF: 2.457).
- J8. **S. M. Kamruzzaman**, “Dynamic TDMA slot reservation protocol for QoS provisioning in cognitive radio ad hoc networks,” *World Academy of Science, Engineering and Technology*, vol. 70, pp. 481–488, October 2010.
- J9. **S. M. Kamruzzaman**, “CR-MAC: A multichannel MAC protocol for cognitive radio ad hoc networks” *International Journal of Computer Networks & Communications (IJCNC)*, vol. 2, no. 5, pp. 1–14, Sept. 2010.
- J10. **S. M. Kamruzzaman**, “An energy efficient multichannel MAC protocol for cognitive radio ad hoc networks,” *International Journal of Communication Networks and Information Security*, vol. 2, no. 2, pp. 112–118, August 2010.
- J11. **S. M. Kamruzzaman**, “RGANN: An efficient algorithm to extract rules from ANNs”, *Journal of Electronics and Computer Science (JECS)*, Jahangirnagar University, Bangladesh, vol. 8, pp. 19–30, June 2007.
- J12. **S. M. Kamruzzaman**, A. N. M. Rezaul Karim, Md. Saiful Islam, and Md. Emdadul Haque, “Speaker identification using MFCC-domain support vector machine,” *International Journal of Electrical and Power Engineering (IJEPE)*, vol. 1, no. 3, pp. 274–278, 2007.
- J13. **S. M. Kamruzzaman**, Rashedur Rashid, and Mahfuz-Ur-Rahman, “A hardware-software co-method for low cost EPROM programmer,” *International Journal of Soft Computing (IJSC)*, vol. 1, no. 2, pp. 121–127, April-June 2006.
- J14. **S. M. Kamruzzaman**, and Md. Monirul Islam, “An algorithm to extract rules from artificial neural networks for medical diagnosis problems,” *International Journal of Information Technology (IJIT)*, vol. 12, no. 8, pp. 41–59, 2006.
- J15. **S. M. Kamruzzaman**, and Md. Monirul Islam, “Extraction of symbolic rules from artificial neural networks,” *World Academy of Science, Engineering and Technology*, vol. 10, pp. 271–277, October 2005.
- J16. **S. M. Kamruzzaman**, and Chowdhury Mofizur Rahman, “Text categorization using association rule and naïve bayes classifier,” *Asian Journal of Information Technology (AJIT)*, vol. 3, no. 9, pp. 657–665, September 2004.

- C1. **S. M. Kamruzzaman**, M. Anwar Hossain, and Abdullah Alghamdi, “Energy efficient cognitive radio MAC protocol for battlefield communications,” Accepted to appear in the Proceedings of the 28th IEEE Canadian Conference on Electrical and Computer Engineering (CCECE’ 2015) to be held in Halifax, Nova Scotia, Canada, May 3–6, 2015.
- C2. Sk. Md. Mizanur Rahman, **S. M. Kamruzzaman**, Ahmad Almogren, Abdulhameed Alelaiwi, Atif Alamri, and Abdullah Alghamdi, “Anonymous and secure communication protocol for cognitive radio ad hoc networks,” in *Proceedings of IEEE International Symposium on Multimedia (ISM 2014)*, Taichung, Taiwan, pp. 393-398, 10-12 December, 2014.
- C3. **S. M. Kamruzzaman**, Abdullah Alghamdi, and Sk. Md. Mizanur Rahman, “Spectrum and energy aware multipath routing for cognitive radio ad hoc networks,” in *Proceedings of the International Conference on ICT Convergence (ICTC-2014)*, Busan, South Korea, pp. 341-346, 22-24 October 2014.
- C4. **S. M. Kamruzzaman**, and Abdullah Alghamdi, “A resource reservation scheme in cognitive radio ad hoc networks for C4I systems,” in *Proceedings of the 28th IEEE International Conference on Advanced Information Networking and Applications Workshops (WAINA-2014)*, Victoria, Canada, pp. 879-886, 13-16 May 2014.
- C5. **S. M. Kamruzzaman**, Eunhee Kim, and Dong Geun Jeong, “Spectrum and energy aware routing protocol for cognitive radio ad hoc networks,” in *Proceedings of the IEEE International Conference on Communications (ICC 2011)*, Kyoto, Japan, pp. 1-5, 5-9 June 2011.
- C6. **S. M. Kamruzzaman**, Eunhee Kim, and Dong Geun Jeong, “An energy efficient QoS routing protocol for cognitive radio ad hoc networks,” in *Proceedings of the 13th IEEE International Conference on Advanced Communication Technology (ICACT-2011)*, Phoenix Park, Korea, pp. 344–349, 13-16 February 2011.
- C7. **S. M. Kamruzzaman**, and Mohammad Shamsul Alam, “Dynamic TDMA slot reservation protocol for cognitive radio ad hoc networks,” in *Proceedings of the 13th IEEE International Conference on Computer and Information Technology (ICCIT-2010)*, Dhaka, Bangladesh, pp. 142–147, 23-25 December 2010.
- C8. **S. M. Kamruzzaman**, “Dynamic resource allocation in multiuser OFDM wireless systems: cross-layer optimization perspective,” in *Proceedings of the 10th International Conference on Computer and Information Technology (ICCIT-2007)*, Dhaka, Bangladesh, 27-29 December 2007.
- C9. **S. M. Kamruzzaman**, and Md. Anisur Rahman, “Performance analysis of pulse shaping technique for OFDM peak to average power ratio reduction,” in *Proceedings of the 12th International Conference on Human Computer Interaction (HCI International-2007)*, Beijing, China, vol. 18, pp. 73–77, 22-27 July 2007.
- C10. **S. M. Kamruzzaman**, Firoz Ahmed Siddiqi, Md. Saiful Islam, and Md. Emdadul Haque, “Rotation invariant face detection using wavelet, PCA, and radial basis function networks,” in *Proceedings of the 12th International Conference on Human Computer Interaction (HCI International-2007)*, Beijing, China, vol. 18, 22-27 July 2007.
- C11. Md. Arafatur Rahman, Md. Saiful Azad, **S. M. Kamruzzaman**, and Md. Jahidur Rahman, “A performance comparison of proactive and reactive routing protocols of mobile ad hoc network (MANET),” in *Proceedings of the 9th International Conference on Computer and Information Technology (ICCIT-2006)*, Dhaka, Bangladesh, 21-23 December 2006.
- C12. S. M. Anamul Haque, **S. M. Kamruzzaman**, and Md. Ashraful Islam, “A system for smart home control of appliances based on timer and speech interaction”, in *Proceedings of the 4th International Conference on Electrical Engineering (ICEE-2006)*, The Institution of Engineers Bangladesh, pp. 128-131, 26-28 January 2006.
- C13. **S. M. Kamruzzaman**, “REx: An efficient rule generator”, in *Proceedings of the 4th International Conference on Electrical Engineering (ICEE-2006)*, The Institution of Engineers Bangladesh, pp. 79–82, 26-28 January 2006.
- C14. **S. M. Kamruzzaman**, “Extracting symbolic rules for medical diagnosis problem,” in *Proceedings of the 8th International Conference on Computer and Information Technology (ICCIT-2005)*, Dhaka, Bangladesh, pp. 602–607, 28-30 December 2005.

- C15. **S. M. Kamruzzaman**, Farhana Haider, and Ahmed Ryadh Hasan, “Text classification using data mining,” in *Proceedings of the International Conference on Information and Communication Technology in Management (ICTM-2005)*, Multimedia University, Melaka, Malaysia, 23-25 May 2005.
- C16. **S. M. Kamruzzaman**, and Farhana Haider, “A hybrid learning algorithm for text classification,” in *Proceedings of the 3rd International Conference on Electrical and Computer Engineering*, Dhaka, Bangladesh, pp. 577–580, 28-30 December 2004.
- C17. **S. M. Kamruzzaman**, Ahmed Ryadh Hasan, Abu Bakar Siddiquee, and Md. Ehsanul Hoque Mazumder, “Medical diagnosis using neural network,” in *Proceedings of the 3rd International Conference on Electrical and Computer Engineering (ICECE-2004)*, BUET, Dhaka, Bangladesh, pp. 537–540, 28-30 December 2004.
- C18. **S. M. Kamruzzaman**, Farhana Haider, and Ahmed Ryadh Hasan, “Text classification using association rule with a hybrid concept of naive bayes classifier and genetic algorithm,” in *Proceedings of the 7th International Conference on Computer and Information Technology (ICCIT-2004)*, Dhaka, Bangladesh, pp. 682–687, 26-28 December 2004.
- C19. Chowdhury Mofizur Rahman, Ferdous Ahmed Sohel, Parvez Naushad, and **S. M. Kamruzzaman**, “Text classification using the concept of association rule of data mining,” in *Proceedings of the International Conference on Information Technology*, Kathmandu, Nepal, pp. 234-241, 23-26 May 2003.

PERSONAL DETAILS

- Sex: Male
- Marital Status: Married (having 2 daughters)
- **Permanent Resident: Canada**
- Nationality: Bangladeshi