

# HUMAYUN KABIR

## EMPLOYMENTS

<b>Professor</b> Department of Computer Science, Vancouver Island University, Nanaimo, BC, Canada	<b>2019- present</b>
<b>Research Scientist</b> Center for Aerospace Research, University of Victoria, BC, Canada	<b>2018- present</b>
<b>Software Engineer</b> Codan Radio Communications, Engineering LMR, Victoria, BC, Canada.	<b>2016-2018</b>
<b>Software Engineer</b> Andrew Sheret Limited, Victoria, BC, Canada.	<b>2014-2016</b>
<b>Postdoctoral Fellow and Research Associate</b> Department of Computer Science, University of Victoria, BC, Canada.	<b>2012-2016</b>
<b>Instructor</b> Department of Computer Science, University of Victoria, BC, Canada.	<b>Summer 2013</b>
<b>Professor</b> Department of Computer Science and Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh (on leave 2012-2017).	<b>2011-2017</b>
<b>Associate Professor</b> Department of Computer Science and Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh.	<b>2007-2011</b>
<b>Assistant Professor</b> Department of Computer Science and Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh (on study leave 2002-2005).	<b>1998-2007</b>
<b>Teaching and Research Assistant</b> Department of Computer Science, University of Victoria, BC, Canada.	<b>2002-2005</b>
<b>Lecturer</b> Department of Computer Science and Engineering, Bangladesh University of Engineering and Technology, Dhaka, Bangladesh.	<b>1996- 1998</b>
<b>Lecturer</b> Department of Computer Science and Engineering, Khulna University, Khulna, Bangladesh	<b>1994-1996</b>

## EDUCATION

<b>PhD, Computer Science</b> University of Victoria (UVIC), Victoria, BC, Canada. Thesis title: <i>Scalable and Interactive Multimedia Streaming over the Internet</i>	<b>2002-2006</b>
<b>Masters, Computer Science and Engineering</b> Bangladesh University of Engineering and Technology (BUET), Dhaka, Bangladesh	<b>1996-1998</b>
<b>Bachelor, Computer Science and Engineering</b> BUET, Dhaka, Bangladesh	<b>1988-1993</b>

## RESEARCH INTERESTS

Artificial Intelligence applicable to Unmanned Air System. Cloud Computing, Delay Tolerant Networks, Opportunistic Networks, Network Mobility, Wireless Sensor Networks, Mobile Ad-hoc Networks, Peer-to-peer Networks, Network Security, Multimedia Streaming, Multimedia Systems, Operating Systems, Distributed Systems, Database Systems, Software Architecture, and Software Engineering.

## TEACHING INTERESTS

Operating Systems, Distributed Systems, Computer Networks, Multimedia Systems, Object-Oriented Programming, System Programming, Software Engineering, Database Systems, Data Structures and Algorithms, and Computer Graphics.

## PUBLICATIONS

### (a) Journals:

1. **Md. Humayun Kabir**, Mohammad Mukhtaruzzaman, Mohammed Atiquzzaman "Efficient Route Optimization Scheme for nested-NEMO", *Journal of Network and Computer Applications (JNCA)*, Elsevier, v.36, no. 3, pp 1039-1049, 2013.
2. **Md. Humayun Kabir** and Khan Md. Al-Farabi, "A Probabilistic Scheme for Reducing the Packet Loss in Mobile IPv6", *Journal of Networks*, Academy Publisher, v. 7, no. 12, pp 1912-1924, December 2012.
3. Anindya Tahsin Prodhan, Rajkumar Das, **Humayun Kabir**, Gholamali C. Shoja, "TTL Based Routing in Opportunistic Networks," *Journal of Network and Computer Applications*, Elsevier, v. 34, no. 5, pp 1660-1670, September 2011.
4. Shahid Md. Asif Iqbal and **Md. Humayun Kabir**, "Hybrid Scheme for Discovering and Selecting Internet Gateway in Mobile Ad Hoc Network", *International Journal of Wireless & Mobile Networks (IJWMN)*, v. 3, no. 4, pp 83-101, August 2011
5. A. B. M. Alim Al Islam, Chowdhury Sayeed Hyder, **Humayun Kabir**, Mahmuda Naznin, "Stable Sensor Network (SSN): A Dynamic Clustering Technique for Maximizing Stability in Wireless Sensor Networks," *International Journal of Wireless Sensor Network (WSN), Scientific Research. USA*, v. 2, no. 7, pp 538-554, July 2010.
6. A. B. M. Alim Al Islam, Chowdhury Sayeed Hyder, **Md. Humayun Kabir**, Mahmuda Naznin, "Finding the Optimal Percentage of Cluster Heads from a New and Complete Mathematical Model on LEACH," *International Journal of Wireless Sensor Network (WSN), Scientific Research. USA*, v. 2, no. 2, pp 41-52, February 2010.

7. S. M. Farhad, Md. Mostofa Akbar, **Md. Humayun Kabir**, "Multicast video-on-demand service in an enterprise network with client-assisted patching," *International Journal of Multimedia Tools and Applications, Springer*, v. 43, no. 1, pp 63-90, May 2009.
8. **M. H. Kabir**, E. G. Manning, G. C. Shoja, "A Scalable Multimedia Streaming Scheme with CBR-transmission of VBR-encoded Videos over the Internet", *International Journal of Interactive Technology and Smart Education (ITSE), Special Issue: Streaming Content Distribution Networks for e-Learning and e-Entertainment*, v. 3 n. 1, pp. 45-58, February 2006.

(b) Conferences Proceedings:

9. Tanjida Kabir, Novia Nurain, and Md Humayun Kabir, "Pro-AODV (Proactive AODV): Simple Modifications to AODV for Proactively Minimizing Congestion in VANETs," In the Proceedings of 1<sup>st</sup> International Conference on Networking Systems and Security 2015 (NSysS 2015)," Dhaka, Bangladesh, January 2015.
10. Ahmed Khurshid, Md Humayun Kabir, and Rajkumar Das, "Modified TCP NewReno for Wireless Networks," In the Proceedings of 1<sup>st</sup> International Conference on Networking Systems and Security 2015 (NSysS 2015)," Dhaka, Bangladesh, January 2015.
11. Md Humayun Kabir, Gholamali C. Shoja, Sudhakar Ganti, "VM Placement Algorithms for Hierarchical Cloud Infrastructure." In the Proceedings of 6<sup>th</sup> IEEE International Conference on Cloud Computing Technology and Science (IEEE CloudCom 2014), Singapore, December 2014.
12. K. M. Sabidur Rahman, Md. Mainul Islam, and Md. Humayun Kabir, "Interplanetary Network: A brief introduction." In the Proceedings of 16<sup>th</sup> International Conference on Computer and Information Technology (ICCIT 2013), pp. 261-266, Khulna, Bangladesh, March 2013.
13. Shaila Sharmeen, M. Ameer Ali, and Md. Shamim H. Ripon, Humayun Kabir, and Nikhil Chandra Shil, "Vendor Selection Using Genetic Algorithm." 16<sup>th</sup> International Conference on Soft Computing and Intelligent Systems and 13<sup>th</sup> International Symposium on Advanced Intelligent Systems, Kobe, Japan, November 2012.
14. Md. Mahmudul Hasan, Shaila Sharmeen, Md. Anisur Rahman, M. Ameer Ali, and Md. Humayun Kabir, "Block Based Image Segmentation," *In the Proceedings of Third International Conference on Advances in Communication, Network, and Computing – CNC 2012*, Chennai, India, February 2012.
15. **M. H. Kabir** and S. M. A. Iqbal, "Internet Gateway Discovery and Selection Scheme in Mobile Ad Hoc Network," *14<sup>th</sup> International Conference on Computer and Information Technology (ICCIT 2011)*, Dhaka, Bangladesh, December 2011.
16. K. M. Al-Farabi and **M. H. Kabir**, "Reducing Packet Loss in Mobile IPv6," *14<sup>th</sup> International Conference on Computer and Information Technology (ICCIT 2011)*, Dhaka, Bangladesh, December 2011.
17. Rajkumar Das, Md. Anindya Tahsin Prodhan, Md. Humayun Kabir, Gholamali C. Shoja, "A Novel Congestion Control Scheme for Delay Tolerant Networks", *in Proc. of IEEE sponsored Int'l Conf. on Selected Topics in Mobile & Wireless Networking (iCOST 2011)*, Shanghai, China, October 2011.
18. M. A. T. Prodhan, R. Das, **M. H. Kabir**, and G. C. Shoja, "Probabilistic Quota Based Adaptive Routing in Opportunistic Networks," *in Proc. of IEEE PACRIM 2011*, Victoria, Canada, August 2011.
19. T. Paul, **M. H. Kabir** and M. A. T. Prodhan, and M. W. Chowdhury, "Methods for XML Phrase Query Processing over a Collection of XML Documents," *in Proc. of IEEE PACRIM 2011*, Victoria, Canada, August 2011.
20. A. Khurshid, **M. H. Kabir**, and M. A. T. Prodhan, "An Improved TCP Congestion Control Algorithm for Wireless Networks," *in Proc. of IEEE PACRIM 2011*, Victoria, Canada, August 2011.
21. S. M. A. Iqbal and **M. H. Kabir**, "An Improved Internet Gateway Discovery and Selection Scheme in Mobile Ad Hoc Network," *in Proc. of International Conference on Electrical and Computer Engineering (ICECE) 2010*, pp. 372-375, Dhaka, December 2010.

22. M. S. Hossain, M. M. Hasan, M. A. Ali, **M. H. Kabir**, and A B M S. Ali, "Automatic Detection and Recognition of Traffic Signs" in Proc. of IEEE International Conference on Cybernetics and Intelligent Systems, Robotics, Automation and Mechatronics (CIS-RAM ) 2010, pp. 286-291, Singapore, June 2010.
23. M. M. Hasan, M. A. Ali, **M. H. Kabir**, and G. Sorwar, "Object Segmentation using Block Based Pattern", in Proc. of *IEEE TENCON 2009*, pp. 1-6, Singapore, November 2009.
24. **M. H. Kabir**, G. C. Shoja, E. G. Manning, "Collaborative Proxy Peering System (CPPS) for Scalable Video Streaming", in Proc. of *IEEE PACRIM 09*, pp.100-105, Victoria, August 2009.
25. **M. H. Kabir**, M. A. Haque, "A Novel Block Matching Algorithm for Motion Vector Estimation", in Proc. of *IEEE PACRIM 09*, pp. 106-111, Victoria, August 2009.
26. M. M. Hossain, M. M. Akbar, **M. H. Kabir**, "Dynamic Adaptive Content Delivery using Genetic Algorithm", in Proc. of *IEEE PACRIM 09*, pp. 471-476, Victoria, August 2009.
27. **M. H. Kabir**, E. G. Manning, G. C. Shoja, "On-demand Segmentation and Proxy Buffer Provisioning for Scalable and Interactive Video Streaming Scheme", in *IEEE Signal Processing Society International Workshop on Multimedia Signal Processing 2006 (MMSp 2006)*, Victoria, BC, Canada, pp.65-70, October 2006.
28. **M. H. Kabir**, E. G. Manning, G. C. Shoja, "A CBR-streaming Scheme for VBR-encoded Videos", in Proc. of *IEEE PACRIM 05*, Victoria, Canada, pp.213-216, August 2005.
29. **M. H. Kabir**, Eric G. Manning, and Gholamali C. Shoja, "An Interactive Scalable Multimedia Streaming Scheme for VBR-encoded Videos", in Proc. of *3rd annual Conference on Communication Networks and Services Research (CNSR2005)*, Halifax, Nova Scotia, Canada, pp.145-150, May 2005.
30. **M. H. Kabir**, Eric G. Manning, and Gholamali C. Shoja, "Scalable Multimedia Streaming Model and Transmission Scheme for VBR-Encoded Videos", in Proc. of *16th IASTED Int. Conf. on Parallel and Distributed Computing and Systems (PDCS)*, MIT, Cambridge, MA, USA, pp.867-872, November 2004.
31. **Md Humayun Kabir**, Eric G Manning, and Gholamali C Shoja, "Request-routing Trends and Techniques in Content Distribution Networks", In Proc. of *International Conference on Computer and Information Technology (ICCIT 2002)*, Dhaka, Bangladesh, pp.315-320, December 2002.
32. Maria Wahid Chowdhury, Chowdhury Mofizur Rahman, and **Md. Humayun Kabir**, "Distributed Index: Algorithms and Models", in Proc. of *ICCIT 2000*, Dhaka, Bangladesh, pp.272-276, December 2000.
33. Mohammad Rashedur Rahman, Sajib Barua, and **Md. Humayun Kabir**, "A Study on Neural Network Technique for Medical Diagnostic Reasoning", in Proc. of *ICCIT 2000*, Dhaka, Bangladesh, pp.210-214, December 2000.
34. **Md. Humayun Kabir**, and Chowdhury Mofizur Rahman, "A new Design Methodology for getting Normalized Relations in Relational Databases", in Proc. of *ICCIT 98*, Dhaka, Bangladesh, pp.179-184, December 1998.
35. **Md. Humayun Kabir**, and Chowdhury Mofizur Rahman, "Database Normalization using Machine Learning Techniques", in Proc. of *National Conference on Computer and Information Systems 97*, Dhaka, Bangladesh, December 1997.

## GRADUATE THESIS SUPERVISIONS

1. "Real Time Detection and Recognition of Vehicle License Plate in Bangla", August 7, 2011.
2. "A Route Optimization Scheme for Nested Network Mobility (NEMO)," May 21, 2011.
3. "Internet Gateway Discovery and Selection Scheme in Mobile Ad Hoc Network," May 04, 2011.

4. "A Novel Congestion Control Algorithm for Delay Tolerant Networks," May 04, 2011.
5. "A Probabilistic Scheme for Reducing Packet Loss of Mobile IPv6," April 2, 2011
6. "Probabilistic Quota Based Adaptive Routing in Opportunistic Network," December 18, 2010
7. "Modified Inverted Files and Algorithms for Phrase Query and NOT Query," December 20, 2009.
8. "A Novel Approach to Cluster Heterogeneous Sensor Network (CHSN)," May 30, 2009.
9. "A Novel Block Matching Algorithm for Motion Vector Estimation," June 30, 2008.
10. "An Improved TCP Congestion Control Algorithm for Wireless Networks," May 31, 2008.
11. "Multimedia Database Indexing," October 24, 2001.

## PROFESSIONAL WORKS

### *Reviewer of reputed International Journals*

- (a) IEEE Transaction on Multimedia.
- (b) IEEE/ACM Transaction on Networks.
- (c) ACM Transactions on Multimedia Computing, Communications and Applications.
- (d) International Journal of Computer Network and Application, Elsevier.
- (e) International Conference on Information and Communication Technology.

### *Membership of International Conferences and Symposiums*

- a) **Technical Program Committee Member:** IEEE ICC'12 NGN and ICC13 NGN (IEEE ICC- Next-Generation Networking Symposium).
- b) **Organizing Committee Member:** Workshop on Algorithm and Computation (WALCOM'2007).
- c) **Organizing Committee Member:** International Conference on Computer and Information Technology (ICCIT'98).
- d) **Judge Committee Member:** Asian Regional ACM/ICPC Programming Contest 2001 held in BUET

### *Session chairs of International Conferences and Symposium*

- (a) IEEE Pacific Rim Conference on Communications, Computers and Signal Processing, Victoria, B.C., Canada, 2004.
- (b) IEEE PACRIM Conference, Victoria, BC, Canada, 2003.
- (c) International Conference on Computer and Information Technology, Dhaka, Bangladesh, 2010.