Dewan Tanvir Ahmed, Ph.D.

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Permanent Address

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CANADA

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Citizenship

Canadian

Objective

A position that will utilize my years of experience in computer science & engineering, computing systems, and software engineering.

Research Interests

Distributed systems and algorithms, pervasive computing, surveillance systems, large-scale collaboration, simulation and modeling, cloud computing, P2P systems, multimedia communications, computer networks, real-time systems, serious games, eHealth, C4I systems, HCI, compiler design, and software engineering.

Academic Appointments

Instructor — Sep 2012 – present
School of Information Technology
Carleton University, Ottawa, Canada

Assistant Professor — August 2011 – June 2012
Software Engineering Department
College of Computer and Information Sciences
King Saud University, Riyadh, KSA

Postdoctoral Research Fellow — October 2009 – July 2011
Distributed and Collaborative Virtual Environments Research Laboratory
University of Ottawa, Canada

Part-time Professor — May 2011 – July 2011
School of Electrical Engineering and Computer Science
University of Ottawa, Canada

Research Assistant — May 2005 – September 2009
Discover Lab, School of Information Technology and Engineering
University of Ottawa, Canada

Faculty — May 2002 – April 2005
Department of Computer Science & Engineering (CSE)
Bangladesh University of Engineering and Technology

Research Projects

Currently running projects as CoI:
- Privacy and Quality-aware Monitoring Framework for Public Security ($382,000).
- Novel Pervasive Computing Approach to Counter and Manage Obesity in KSA ($400,000).

Research Staff, in the following University of Ottawa projects:
- MASSIVE GAIN: Massively Multiuser Virtual Environments and Games with Haptic Interaction
- HARVEST: A Framework for HAptic, inteRactive Virtual EnvironmentS for Tele-presence
- Advanced Protocols for Multi-Participant Multimedia Communications
- IBM MUSES_SECRET: MUltimodal- SurvEillance System for SECurity-RElaTed Applications
- Advanced Protocols for Multi-Participant Multimedia Communications
- Massively Multiuser Virtual Environments and Online Gaming

Education

University of Ottawa, Ottawa, ON Canada

Ph.D., Computer Science, December 2009

Thesis Topic:	*Architectural Challenges and Solutions for Peer-to-Peer Massively Multiplayer Online Games*
Faculty:	Faculty of Engineering
Duration:	May 2005 to December 2009
Adviser:	Professor Shervin Shirmohammadi

Bangladesh University of Engineering and Technology, Dhaka, Bangladesh

M.S., Computer Science & Engineering, September 2004

Thesis Topic:	*A Hybrid Admission Control Algorithm for Multimedia Server*
Faculty:	Faculty of Engineering
Duration:	April 2002 to September 2004
Adviser:	Professor Mohammad Mostafa Akbar

B.S., Computer Science & Engineering, April 2002

Thesis Topic:	*Bangla Character Recognition using Nearest Neighbor Concept*
Faculty:	Faculty of Engineering
Adviser:	Md. Abdus Sattar

Industrial Experience and Development Skills

Senior Software Engineer   November 2001 - May 2002

Bangladesh Japan Information Technology (BJIT), Dhaka, Bangladesh

Programming Languages and Tools

Languages: C/C++, C#, Java, Pascal, Assembly language, Prolog, MySQL, Shell Script, Latex, Python, HTML, PHP, Ajax

Tools: g++, gcc, Microsoft Visual Studio 2010, Eclipse, Win CVS, LDAP, CPLEX, MATLAB, ns2, OPNET

Operating systems: Windows, Linux

Awards

Quality Reviewer award

IEEE ICME, Barcelona, Spain, July 2011

Industrial Research and Development Fellowship (IRDF)

Natural Sciences and Engineering Research Council of Canada, 2010

Best Student Researcher award – 2009

Ottawa Centre for Research and Innovation (OCRI), Canada

Dean's Honor List

Faculty of Engineering's, University of Ottawa, 2007-2008

Best Poster Award in Computer Science

Faculty of Engineering Research and Graduate Studies Day, 2008

Student Travel Grant Award

IEEE International Instrumentation and Measurement Technology Conference Victoria, Canada, 2008

Best Paper Award

IEEE WETICE COPS workshop, Paris, France, 2007

Research Travel grants – 3 times

University of Ottawa

Teaching Experience

@ Carleon University, Canada
Courses: Design Studio 4 (Game design, XNA proramming, Unity).

@ King Saud University, KSA
Courses: Human Computer Interaction, and Software Design and Architecture.

@ University of Ottawa, Canada
Courses: Analysis and Design of User Interfaces.

@ University of Ottawa, as TA
Courses: Digital Systems I, Higher Layer Network Protocols, Operating System Principles, Introduction to Computing II, Data Structures and Algorithms, Computing Concepts for Business.

@ Bangladesh University of Engineering and Technology
Courses: Structured Programming, Compiler Design, Computer Networks, Computer Graphics, Pattern Recognition, Software Engineering, Software Development, VLSI Design, Digital Logic Design and Microprocessors.

@ Bangladesh Military Institute of Science and Technology (Guest Faculty)
Courses: Computer Interfacing, and Pattern Recognition.

@ Ahsanullah University of Science and Technology (Guest Faculty)
Courses: VLSI Design, and Computer Graphics.

CCNA instructor of Regional and local CISCO academy
Courses: CCNA 1, CCNA 2, CCNA 3, CCNA 4.

Scholarship

University of Ottawa
- Admission Scholarship, 2005–2009
- International Tuition Fee Scholarship, 2005–2009

Bangladesh University of Engineering and Technology
- Dean's Honor Scholarship (2nd, 3rd and 4th year of B.Sc.)

Bangladesh Government
- Education Board Scholarship in 12th Grade Examination (a few positions out of 0.5 million)
- Education Board Scholarship in 10th Grade Examination (a few positions out of 0.8 million)

Professional Affiliations
- Institute of Electrical and Electronics Engineers (IEEE)
- Instrumentation and Measurement Society
- IEEE Communications Society

Scholarly Activities

Member of Program Committees - Organizing Conferences or meetings

1. IEEE International Conference on Multimedia and Expo (ICME), San Jose, California, 2013.
2. ACM International workshop on Network and Operating Systems Support for Digital Audio and Video, Oslo, Norway, 2013.
3. IEEE International Workshop on Mobile Peer-to-Peer Computing (a PerCom workshop), San Diego, CA, 2013.
4. ACM Workshop on Cloud-Based Multimedia Applications and Services for E-Health (CBMAS-EH), Nara, Japan, 2012.
5. International Workshop on Massively Multiuser Virtual Environments (MMVE), Munich, Germany, 2012.
6. ACM International workshop on Network and Operating Systems Support for Digital Audio and Video, Toronto, Canada, 2012.
7. IEEE International Conference on Multimedia and Expo (ICME), Melbourne, Australia, 2012
8. Symposium on Virtual and Augmented Reality (SVR), Niteroi/RJ, Brazil, 2012.
9. ACM Multimedia, Scottsdale, Arizona, USA, 2011.
10. The 4th International Workshop on Massively Multiuser Virtual Environments, Nanchang, Jiang Xi Province, China, 2011.
11. IEEE Virtual Environments, Human-Computer Interfaces, and Measurement Systems, Ottawa, Canada, 2011.
12. Technical Program Co-Chair, Net Games 2011, Ottawa, Canada, 2011.
13. Symposium on Virtual and Augmented Reality (SVR), Uberlndia, Brazil, 2011

14. IEEE International Conference on Multimedia and Expo (ICME), Barcelona, Spain, 2011
15. IIEE INFOCOM, Intl Workshop on Future Media Networks and IP-based TV, Shanghai, China, 2011.
16. IEEE Symposium on Artificial Intelligence and Signal Processing (AISP), Tehran, Iran, 2011
17. International Conference on Embedded and Multimedia Computing (EMC), Enshi, China, 2011.
18. IEEE International Workshop on Interactive Ambient Intelligence Multimedia Environments (AIME), Barcelona, Spain, 2011
19. IEEE International Workshop on Advances in Automated Multimedia Surveillance for Public Safety (AAMS-PS), Barcelona, Spain, 2011.

Technical Reviewer of

1. IEEE Transactions on Information Technology in BioMedicine.
2. IEEE Journal on Selected Areas in Communications QoE-aware Wireless Multimedia Systems (JSAC-SI QoE).
3. Springer's Multimedia Systems journal.
4. IEEE Transactions on Mobile Computing (TMC).
5. ACM Transactions on Multimedia Computing, Communications, and Applications (TOMCCAP).
6. IEEE Journal on Selected Areas in Communications.
7. Int'l Journal of Advanced Media and Communication (IJAMC).
8. Int'l Journal of Computer Games Technology (IJCGT).
9. Massively Multiuser Online Gaming Systems & Applications, Spec. Iss. of Springer's Multimedia Tools and Applications, 2009.
10. ACM Multimedia ACM Multimedia, 2005 – 2010.
11. IEEE International Workshop on Mobile Peer-to-Peer Computing 2007 – 2010.
12. IEEE Int'l Instrumentation and Measurement Technology Conference 2008 – 2010.
13. IEEE conf. on Information Sciences, Signal Processing and their Applications - 2010.
14. ACM Int'l workshop on Network and Operating Systems Support for Digital Audio & Video (NOSSDAV) 2007 – 2010.
15. IEEE Int'l Conference on Embedded and Multimedia Computing, 2010.
16. IEEE Collaborative Service-oriented P2P Information Systems COPS 2007.
17. ACM Computer Supported Cooperative Work 2006.
18. Multimedia Computing and Networking (MMCN), 2008.

Selected Presentation

1. Dynamic Resource Allocation for Event Processing in Surveillance Systems, Melbourne, Australia.
2. An Automated Decision Support Engine for Video Surveillance, IBM CASCON workshop, Markham, Canada.
3. Virtual Collaboration over Hybrid Systems, IBM Watson Research Center, Hawthorne, NY.
4. A Quality Control Algorithm Based on Virtual Distance in Games, Cebu, Philippines.
5. Uniform and Non-Uniform Zoning for Load Balancing in Virtual Environments, Cebu, Philippines.
6. Model and Measurement of MMOG Time-Constraint Relaxation Algorithm, Singapore.
7. A Dynamic Area of Interest Management and Collaboration Model for P2P MMOGs, Vancouver, Canada.
8. A Microcell Oriented Load Balancing Model for Collaborative Virtual Environments, Turkey.
9. A Distributed Interest Management Scheme for Massively Multi-user Virtual Environments, Turkey.
10. Model and Measurement of State Dissemination in MMOGs, Victoria, BC, Canada.
11. Hierarchical HMM Model and Measurement of Online Gaming Traffic Patterns, Victoria, Canada.
12. An Auxiliary Area of Interest Management for Synchronization and Load Regulation in Zonal P2P MMOGs, Ottawa, Canada.
13. A Distributed Topology Control Algorithm for P2P Based Simulations, Crete Island, Greece.
14. Performance Enhancement in MMOGs Using Entity Types, Chania, Crete Island, Greece.
15. A Visibility-Driven Approach to Managing Interest in Collaborative Virtual Environments with Dynamic Load Balancing, Chania, Crete Island, Greece.
16. Improving Gaming Experience in Zonal MMOGs, Augsburg, Germany.
17. The Roots and the Rationale behind the ALM Based Collaboration, Paris, France.
18. A Dominating Set Based Peer-to-Peer Protocol for Real-Time Multi-Source Collaboration, Paris, France.
19. Architectural Analysis of Multicast Routing Protocols for Wireless Ad Hoc Networks, Martinique
20. Design Issues of Peer-to-Peer Systems for Wireless Ad Hoc Networks, Martinique.
21. Multi-Level Hashing for Peer-to-Peer System in Wireless Ad Hoc Environment, White Plains, NY.
22. BM-ALM: An Application Layer Multicasting with Behavior Monitoring Approach, San Diego, CA.
23. MPEG-21 Based Temporal Adaptation of Live H.264 Video, San Diego, CA.
24. A Novel Method for Supporting Massively Multi-user Virtual Environments, Ottawa, Canada.
25. Zone Based Messaging in Collaborative Virtual Environments, Ottawa, Canada.
26. A Hybrid P2P Protocol for Real-time Applications, Manchester, UK.

Publications

JOURNALS

1. **Dewan Tanvir Ahmed**, M.A. Hossain, S. Shirmohammadi, A. Alghamdi, P.K. Atrey, and A. El Saddik. Utility based Decision Support Engine for Camera View Selection in Multimedia Surveillance Systems, *Special Issue on Advances in multimedia surveillance, Springer Int. J. Multimedia Tools and Applications*, accepted 2012.
2. M. Anawar Hossain and **Dewan Tanvir Ahmed**. Virtual Caregiver: An Ambient-aware Elderly Monitoring System, *IEEE transaction on Information Technology in Biomedicine*, June, 2012.
3. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Improving Online Gaming Experience Using Location Awareness and Interaction Details, *Journal of Multimedia Tools and Applications, Springer Netherlands*, pp. 1-11. 2011.
4. **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and Jauvane C. Oliveira, A Hybrid P2P Communications Architecture for Zonal MMOGs, *Journal of Multimedia Tools and Applications, Springer Netherlands*, 45, I(3), pp. 313-345, 2010 .
5. Shervin Shirmohammadi, Ihab Kazem, **Dewan Tanvir Ahmed**, Madeh El-Badaoui and Jauvane C. Oliveira, A Visibility-Driven Approach for Zone Management in Simulations, *SCS Simulations*, 84(5), 215-229, 2008.
6. Mojtaba Hosseini, **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and Nicolas D. Georganas, A Survey of Application-Layer Multicast Protocols, *IEEE Communications Surveys and Tutorials*, vol. 9, I(3), pp. 58-74, 2007.
7. **Dewan Tanvir Ahmed**, Mosharaf K. Chowdhury and Mohammad Mostafa Akbar, Admission Control Algorithm for Multimedia Server: A Hybrid Approach, *International Journal of Computers and Applications*, ACTA Press, 2006.

BOOK CHAPTERS

1. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi. A Message Prioritization Scheme for Virtual Collaboration, *Recent Progress in Data Engineering and Internet Technology, Lecture Notes in Electrical Engineering*, Volume 157, pp. 377-385, 2012.
2. **Dewan Tanvir Ahmed** and S. Shirmohammadi. Zoning Issues and Area of Interest Management in MMOGs, *Handbook of Digital Media in Entertainment and Arts, Borko Furht, Springer*, pp. 175-196., and ISBN: 978-0-387-89023-4, 2009.
3. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi. Networking for Massively Multiuser Online Gaming, *Encyclopedia of Multimedia*, pp. 664-670, Borko Furht, Springer, ISBN: 978-0-387-74724-8, 2008.
4. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Mobile P2P Computing, *Encyclopedia of Wireless and Mobile Communications*, pp. 751-758, Borko Furht, Taylor & Francis, ISBN: 1420043269, 2008.
5. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Multicasting in Mobile Ad Hoc Networks, *Encyclopedia of Wireless and Mobile Communications*, pp. 546-555, Borko Furht, Taylor & Francis, ISBN: 1420043269, 2008.

PAPERS

1. M. Mehedi Hassan, M. Shamim Hossain, A. Alamri, M. Anwar Hossain, M. Al-Qurishi, Y. Aldukhayyil, **Dewan Tanvir Ahmed**, A Cloud-Based Serious Games Framework for Obesity, *Proc. ACM Workshop on Cloud-Based Multimedia Applications and Services for E-Health (CBMAS-EH)*, Nara, Japan, November 2, 2012.
2. **Dewan Tanvir Ahmed**, Dynamic Resource Allocation for Event Processing in Surveillance Systems, *Proc. IEEE Workshop on Advances in Automated Multimedia Surveillance for Public Safety (AAMS-PS), in Proc. IEEE International Conference on Multimedia & Expo*, Melbourne, Australia, July 9-13, 2012.
3. M. Anwar Hossain and **Dewan Tanvir Ahmed**, A Human Caregiver Support System in Elderly Monitoring Facility, *Proc. IEEE Workshop on Multimedia Services and Technologies for E-health (MUST-EH), in Proc. IEEE International Conference on Multimedia & Expo*, Melbourne, Australia, July 9-13, 2012.
4. **Dewan Tanvir Ahmed** and M. Anwar Hossain, Dynamic Prioritization of Multi-sensor Feeds for Resource Limited Surveillance Systems, *Proc. IEEE International Instrumentation and Measurement Technology Conference*, Graz, Austria, May 13-16 2012.
5. M. Anwar Hossain, **Dewan Tanvir Ahmed** and Jorge Parra, A Framework for Computing Quality of Information in Multi-sensor Systems, *Proc. IEEE International Instrumentation and Measurement Technology Conference*, Graz, Austria, May 13-16 2012.
6. Mohammad Hosseini, **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Adaptive 3D Texture Streaming in M3G-based Mobile Games, *ACM Multimedia Systems conference (MMsys)*, Chapel Hill, North Carolina, USA, February 22-24, 2012.
7. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Decision Support Engine for Video Surveillance Systems, *Proc. IEEE Workshop on Advances in Automated Multimedia Surveillance for Public Safety (AAMS-PS), in Proc. IEEE International Conference on Multimedia & Expo*, Barcelona, Spain, July 11-15, 2011.
8. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Quality Control Algorithm Based on Virtual Distance in Games, *Proc. International Conference on Embedded and Multimedia Computing*, Cebu, Philippines, August, 2010.
9. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Uniform and Non-Uniform Zoning for Load Balancing in Virtual Environments, *Proc. International Conference on Embedded and Multimedia Computing*, Cebu, Philippines, August, 2010.
10. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Fault Tolerance Procedure for P2P Online Games, *Proc. International Conference on Information Sciences, Signal Processing and their Applications*, Kuala Lumpur, Malaysia, May 2010.

11. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, An Algorithm for Measurement and Detection of Path Cheating in Virtual Environments, *Proc. IEEE Conference on Virtual Environments, Human-Computer Interfaces, and Measurement Systems*, Hong Kong, China, May 11-13, 2009.

12. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Model and Measurement of MMOG Time-Constraint Relaxation Algorithm, *Proc. IEEE International Instrumentation and Measurement Technology Conference*, Singapore, May 5-7, 2009.

13. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Intelligent Path Finding for Avatars in Massively Multiplayer Online Games, *Proc. IEEE Workshop on Computational Intelligence in Virtual Environments, in Proc. IEEE Symposium Series on Computational Intelligence*, Nashville, TN, USA, March 30 - April 2, 2009.

14. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Dynamic Area of Interest Management and Collaboration Model for P2P MMOGs, *Proc. IEEE Int. Symposium on Distributed Simulation and Real Time Applications*, Vancouver, BC, Canada, October 2008.

15. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Microcell Oriented Load Balancing Model for Collaborative Virtual Environments, *Proc. IEEE Conference on Virtual Environments, Human-Computer Interfaces, and Measurement Systems*, Istanbul, Turkey, July 2008.

16. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Model and Measurement of State Dissemination in MMOGs, *Proc. IEEE International Instrumentation and Measurement Technology Conference*, Victoria, BC, Canada, May 2008.

17. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, An Expedite State Dissemination Mechanism for MMOGs, *Proc. International Symposium on Parallel Architectures, Algorithms, and Networks*, Sydney, Australia, May 2008.

18. Razib Iqbal, **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Distributed Video Adaptation and Streaming for Heterogeneous Devices, *Proc. IEEE Workshop on Mobile Peer-to-Peer Computing*, Hong Kong, China, March 2008.

19. **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and Jauvane C. Oliveira, Performance Enhancement in MMOGs Using Entity Types, *Proc. IEEE Int. Symposium on Distributed Simulation and Real Time Applications*, Chania, Crete Island, October 2007.

20. Ihab Kazem, **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Visibility-Driven Approach to Managing Interest in Collaborative Virtual Environments with Dynamic Load Balancing, *Proc. IEEE Int. Symposium on Distributed Simulation and Real Time Applications*, Chania, Crete Island, October 2007.

21. **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and Jauvane C. Oliveira, Improving Gaming Experience in Zonal MMOGs, *Proc. ACM Multimedia*, Augsburg, Germany, September 2007.

22. **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and Jauvane C. Oliveira, State Management in Large Scale Group Communication, *Proc. IEEE Int. Conference on Signal Processing and Communication*, Dubai, UAE, November 2007.

23. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Framework for Provisioning Overlay Network Based Multimedia Distribution Services, *Proc. IEEE International Conference on Multimedia & Expo*, Beijing, China, July 2007.

24. **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and A. El Saddik, A Dominating Set Based Peer-to-Peer Protocol for Real-Time Multi-Source Collaboration, *Proc. IEEE Workshop on Collaborative P2P Information Systems*, Paris, France, June 2007.

25. **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and Jauvane C. Oliveira, Supporting Large-Scale Networked Virtual Environments, *Proc. IEEE Conference on Virtual Environments, Human-Computer Interfaces, and Measurement Systems*, Ostuni, Italy, June 2007.

26. Choudhury A. Al Sayeed, **Dewan Tanvir Ahmed** and Akbar G. P. Rahbar, Hybrid Maximal Matching for Input Buffered Crossbar Switches, *Proc. IEEE/ACM Conference on Communication Networks and Services Research*, Fredericton, NB, Canada, May 2007.

27. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Architectural Analysis of Multicast Routing Protocols for Wireless Ad Hoc Networks, *Proc. IEEE International Conference on Networking*, Martinique, April 2007.

28. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Design Issues of Peer-to-Peer Systems for Wireless Ad Hoc Networks, *Proc. IEEE International Conference on Networking*, Martinique, April 2007.

29. Ihab Kazem, **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Zone Based Architecture for Massively Multiuser Simulations, *Proc. SCS/ACM Communications and Networking Simulation Symposium*, Norfolk, VA, USA, March 2007.

30. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, Multi-Level Hashing for Peer-to-Peer System in Wireless Ad Hoc Environment, *Proc. IEEE Workshop on Mobile Peer-to-Peer Computing*, White Plains, NY, USA, March 2007.

31. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, "BM-ALM: An Application Layer Multicasting with Behavior Monitoring Approach, *Proc. IEEE International Symposium on Multimedia*, San Diego, CA, USA, December 2006.

32. **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and Jauvane C. Oliveira, A Novel Method for Supporting Massively Multi-user Virtual Environments, *Proc. IEEE Workshop on Haptic Audio Visual Environments and their Applications*, Ottawa, ON, Canada, November 2006.

33. **Dewan Tanvir Ahmed**, Shervin Shirmohammadi and Ihab Kazem, Zone Based Messaging in Collaborative Virtual Environments, *Proc. IEEE Workshop on Haptic Audio Visual Environments and their Applications*, Ottawa, ON, Canada, November 2006.

34. **Dewan Tanvir Ahmed** and Shervin Shirmohammadi, A Hybrid Protocol for Real-time Application, *15th IEEE International Workshops for Enabling Technologies: Infrastructure for Collaborative Enterprises, Manchester*, UK, June 26-28, 2006.