SK Alamgir Hossain

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Education

- **M.Sc. in Computer Science**   Ottawa, ON, Canada
  University of Ottawa   *October 2011*
  - GPA: 9.6 out of 10
  - Thesis: Design and development of a framework to bridge the gap between real and virtual.
  - Advised by: Prof. Dr.-Ing. Abdulmotaleb El Saddik.

- **B.Sc. in Computer Science & Engineering**   Khulna, Bangladesh
  Khulna University   *May 2006*
  - GPA: 3.89 out of 4, and Dean's Honour List each year
  - Thesis: Efficient digital image watermarking technique based on discrete cosine transform and discrete wavelet transform.
  - Advised by: Prof. Dr. Rameswar Debnath.

Professional Certification

- **Microsoft Certified Technology Specialist (MCTS)**   *July 2008*
  Microsoft .NET Framework - Application Development Foundation
  - Online Transcript: https://mcp.microsoft.com/authenticate/ValidateMCP.aspx
  - Transcript Id: 802356, Access code: hiramcpd

Awards & Achievements

2011	University of Ottawa, Excellence Scholarship (2010-2011)
	Ontario Graduate Scholarship (for international students) (2010-2011)
	Best Web Designer in *MCRLab web application design competition*
2008	Microsoft Certificate of Excellence Award, completed the *MCTS* exam with 97% marks
2007	Received Best Finish Award, *Pyxisnet 3D Game Coding Competition*, Dhaka, Bangladesh
2006	Second rank with Distinction in B.Sc. in Computer Science & Engineering, Khulna University, Bangladesh
	Awarded **1st** according to the visitors votes at BRAC Bank IT FAIR
2005	**1st** position in the *Southern Regional Programming Contest 2005*
	14th position in the *ACM Int. Collegiate Programming Contest* Dhaka Site
2004	**3rd** Position in *Khulna University Programming Contest*, 2004
	35th position in the *ACM Int. Collegiate Programming Contest* Dhaka Site
2002-06	Solutions to over 500 problems accepted at UVA Online Judge
	Topcoder rated member
	Education Board Scholarship/Dean's List in the year 2003, 04, 05, 06

Academic and Research Awards

Ontario Graduate Scholarship (OGS for international students) ($15 000) . . . . 2010 - 2011
Excellence Scholarship, University of Ottawa ($15 000)   . . . . 2010 - 2011
Research Assistantship, University of Ottawa, ($25 000) . . . . 2010 - 2012

Research Interests

The Internet of Things (IoT), Human-Computer Interaction (HCI), Virtual reality with Haptic, Tangible Computing, Ambient Intelligence and Humanized Computing, Smart Environment and Telesurveillance System

Working Experience

- **Assistant Professor** — Khulna, Bangladesh
  Computer Science and Engineering Discipline, Khulna University — *Sep 2011 - To date*
    - Demonstrated in depth knowledge of theoretical computer science.
    - Significant achievement as a programming contest coordinator.

- **Research Assistant** — Ottawa, ON, Canada
  Discover Lab, University of Ottawa (www.discover.uottawa.ca) — *Jan 2010 - Sep 2011*
    - Developed haptic based real and virtual collaborative tool.
    - Demonstrated high quality research and publications.

- **Webmaster** — Ottawa, ON, Canada
  Faculty of Arts, University of Ottawa. — *Nov 2010 - Sep 2011*
    - Provided easy manageable, graphical organization chart for University of Ottawa.
    - Designed & developed *research project management* and *asset management software* .

- **Teaching Assistant** — Ottawa, ON, Canada
  Faculty of Engineering, University of Ottawa — *Sept 2010 - Aug 2011*
    - Marked assignments, examinations, and taught courses. Conducted the lab sessions.

- **Lecturer** — Khulna, Bangladesh
  Computer Science and Engineering Discipline, Khulna University — *Sep 2008 - Dec 2009*
    - Demonstrated in depth knowledge of theoretical computer science.
    - Significant achievement as a programming contest coordinator.

- **Software Engineer** — Dhaka, Bangladesh
  The Jaxara IT Ltd (www.jaxara.com) — *Jan 2008 - Sep 2008*
    - Demonstrated to work in Scrum project management framework.
    - Successfully lead a project called *ASLA LACES*.

- **Software Engineer** — Dhaka, Bangladesh
  Pyxisnet Ltd (www.pyxisnet.com) — *Apr 2007 - Dec 2007*
    - Successfully implemented messaging module in web-based collaborative tool (GC.net) and improved the data archiving method.

- **Summer Intern** — Dhaka, Bangladesh
  Pacific Bangladesh Telecom Ltd (www.citycell.com) — *Dec 2005 - Feb 2006*
  - Successfully developed automatic optical character recognition based subscriber entry management system.
  - Redesigned the company's IT reporting by using Crystal Report and Belarc PC tools.

TEACHING EXPERIENCE

- **Computer Algorithms** — Khulna University
  Instructor — *Summer 2016*
  - Delivered lectures, supervised labs, marked assignments and exams.

- **Human Computer Interaction** — Khulna University
  Instructor — *Summer 2012, 2013, 2014*
  - Delivered lectures, marked assignments and exams.

- **Object Oriented Programming** — Khulna University
  Instructor — *Winter 2012, 2013, 2014*
  - Delivered lectures, supervised labs, marked assignments and exams.

- **WWW Structures, Techniques and Standards** — University of Ottawa
  Teaching Assistant — *Summer 2011*
  - Marked assignments, examinations, and taught the course.
  - Conducted the lab sessions.

- **Professional Practice in Computer Science** — University of Ottawa
  Teaching Assistant — *Winter 2010*
  - Prepared and marked assignments. Conduct the student group discussion sessions.

- **Computer Networks** — Khulna University
  Instructor — *Fall 2008, Fall 2009*
  - Delivered lectures, supervised labs, marked assignments and exams.

- **Database Management System** — Khulna University
  Instructor — *Winter 2009*
  - Delivered lectures, supervised labs, marked assignments and exams.

CONTRIBUTIONS TO RESEARCH AND DEVELOPMENT

a. Book Chapters

[1] A. Rahman, **SA. Hossain**, and A. El Saddik. Haptic Interaction and Avatar Animation Rendering Centric Telepresence in Second Life. *Multimedia Image and Video Processing (2nd edition)*, March 2012 by CRC Press, pp. 717-739, ISBN: 978-1-4398-3086-4.

b. Articles published or accepted in refereed journals

[1] M. Anwar Hossain, Atif Alamri, Ahmad S. Almogren, **SA. Hossain**, and Jorge Parra. (2014). A Framework for a Context-Aware Elderly Entertainment Support System. **Sensors** 2014, 14(6), 10538-10561.

[2] M. Shamim Hossain, **SA. Hossain**, AM. Alamri, and A. El Saddik. Ant-based service selection framework in smart home monitoring environment. To be published in *Multimedia Tools and Applications (MTAP)* (accepted).

[3] **SA. Hossain**, A. Rahman, and A. El Saddik, Measurements of Multi-modal Approach to Haptic Interaction in Second Life Inter-personal Communication System. In *IEEE Transactions on Instrumentation & Measurement*, vol.60, no.11, pp.3547-3558, Nov. 2011.

c. International conference papers

[1] MNA Hossain, A Pal and **SA. Hossain**. A Wearable Sensor Based Elderly Home Care System in a Smart Environment. *Proceedings of ICCIT 2015 - the 18th International Conference on Computer and Information Technology*, Dhaka, Bangladesh. Dec 2015.

[2] T. Tasneem, A. Shome and **SA. Hossain**. A Gamming Approach In Physical Therapy for Facial Nerve Paralysis Patient. *Proceedings of ICCIT 2013 - the 16th International Conference on Computer and Information Technology*, Khulna, Bangladesh. Dec 2013.

[3] **SA. Hossain**, T. Tabassum DBF-MLT: NP-Completeness of Specialized Voice Service in Networked Virtual Environment a Peer-to-Peer Approach. *Proceedings of ICCIT 2013 - the 16th International Conference on Computer and Information Technology*, Khulna, Bangladesh. Dec 2013.

[4] **SA. Hossain**, T. Tabassum Neural net based complete character recognition scheme for Bangla printed text books. *Proceedings of ICCIT 2013 - the 16th International Conference on Computer and Information Technology*, Khulna, Bangladesh. Dec 2013.

[5] MAA Ahasan, **SA. Hossain**, and AU Siddiquee. (2012). Obstacles invariant navigation of An Autonomous Robot based on GPS. *Proceedings of ICCIT 2012 - the 15th International Conference on Computer and Information Technology*,Chittagong, Bangladesh, Dec. 2012.

[6] AMohmmad Ullah, MR Islam, SF Aktar, **SA. Hossain**. (2012). Remote-Touch: Augmented reality based marker tracking for Smart Home control. *Proceedings of ICCIT 2012 - the 15th International Conference on Computer and Information Technology*,Chittagong, Bangladesh, Dec. 2012.

[7] **SA. Hossain**, A. Rahman, and A. El Saddik. Bringing Virtual Events into Real Life in Second Life Home Automation System. *Proceedings of VECIMS 2011 - the IEEE Conference on Virtual Environments, Human-Computer Interfaces and Measurement Systems*, Ottawa, Canada, Sept 2011.

[8] **SA. Hossain**, A. Rahman, and A. El Saddik. Fusion of Face Networks through the Surveillance of Public Spaces to address Sociological Security Recommendations. *Proceedings of ICME 2011 - the IEEE Conference on Multimedia & Expo*, pp.1-6, Barcelona, Spain, July 2011.

[9] **SA. Hossain**, A. Rahman, and A. El Saddik. Interpersonal haptic communication in second life. *Proceedings of HAVE 2010 - the 9th IEEE International Symposium on Haptic Audio Visual Environments and Games*, pp.1-4, Arizona, USA, Oct 2010.

[10] A. Rahman, **SA. Hossain**, and A. El Saddik. Bridging the Gap between Virtual and Real World by Bringing an Interpersonal Haptic Communication System in Second Life. *Proceedings of ISM 2010 - the IEEE International Symposium on Multimedia*, pp. 228-235, Taichung, Taiwan, Dec 2010.

[11] **SA. Hossain**, A. Rahman, T. Tran, and A. El Saddik. Location aware question answering based product searching in mobile handheld devices. *Proceedings of DS-RT 2010 - the 14th IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications*, pp.189-195, Fairfax, Virginia, USA, Oct 2010.

[12] A. Rahman, T. Tran, **SA. Hossain**, and A. El Saddik. Augmented rendering of makeup features in a smart interactive mirror system for decision support in cosmetic products selection. *Proceedings of DS-RT 2010 - the 14th IEEE/ACM International Symposium on Distributed Simulation and Real Time Applications*, pp. 203-206, Fairfax, Virginia, USA, Oct 2010.

[13] **SA. Hossain**, A. Rahman, and A. El Saddik. Haptic based emotional communication system in second life. *Proceedings of HAVE 2010 - the 9th IEEE International Symposium on Haptic Audio Visual Environments and Games.* Demo, pp.1-1, Arizona, USA, Oct 2010.

[14] SMM. Islam, R. Debnath, and **SA. Hossain**. DWT based digital watermarking technique and its robustness on image rotation, scaling, jpeg compression, cropping and multiple watermarking. *Proceedings of ICICT 2007 - International Conference on Information and Communication Technology*, pp.246-249, Dhaka, Bangladesh, March 2007.

[15] **SA. Hossain**, SMM. Islam, and R. Debnath. Improvement of the Performance of DCT Based Digital Image Watermarking Technique. *Proceedings of ICCIT 2006 - the 9th International Conference on Computer and Information Technology*, Dhaka, Bangladesh. Dec 2006.

[16] **SA. Hossain**, and MIA. Khan. Designing 14-Segment Display for English Alphabet. *Proceedings of ICCIT 2006 - the 7th International Conference on Computer and Information Technology*, Dhaka, Bangladesh. Dec 2004.

d. <u>Non-refereed contributions (Technical Reports and Thesis)</u>

[17] **SA. Hossain**. *Design and development of a framework to bridge the gap between real and virtual.* Master's Thesis, University of Ottawa, Ottawa, Canada, Oct 2011.

[18] **SA. Hossain**, SMM. Islam. *Efficient Digital Image Watermarking Technique Based On Discrete Cosine Transform and Discrete Wavelet Transform.* Undergraduate Thesis, Khulna University, Khulna, Bangladesh, Dec 2006.

PRESENTATIONS

- **SOA-based Multimedia Services for Intelligent Surveillance** — Toronto, Canada
  IBM Centers for Advanced Studies: CASCON S3 Workshop — *Nov 2011*

- **Bringing Virtual Events into Real Life in SL Home Automation Sys.** — Ottawa, Canada
  VECIMS Conference — *Sept 2011*

- **SOA based Service Integration for Int. Surveillance in a Sensor Env.** — Ottawa, Canada
  MEdia-Server and Support for Advanced Gaming Environments Workshop — *Feb 2011*

- **Flexible SOA based Service Integration for Intelligent Surveillance** — Toronto, Canada
  IBM Centers for Advanced Studies: CASCON S3 Workshop — *Nov 2010*

- **DWT Based Watermarking Technique and its Robustness** — Dhaka, Bangladesh
  International Conference on Information and Communication Technology — *Mar 2007*

- **Improvement of the Performance of DCT Based Watermarking** — Dhaka, Bangladesh
  9th International Conference on Computer and Information Technology — *Dec 2006*

- **Submarine Cable, prob. and benefits in the context of Bangladesh** — Khulna, Bangladesh
  Undergraduate Seminar — *Jun 2006*

Extra Curricular

- **Reviewer** — Barcelona, Spain
  IEEE International Conference on Multimedia & Expo (ICME) — *Jul 2011*
- **Programming Contest Coordinator** — Khulna, Bangladesh
  CSE Discipline, Khulna University — *2008-2013*
- **Associate member** — Dhaka, Bangladesh
  Engineers Institution Bangladesh (IEB) — *2008-2012*
- **Student member** — NY, USA
  Institute of Electrical and Electronics Engineers Inc. (IEEE) — *2003-2007*

Key Projects

- **Broadcasting and Monitoring System www.kusmartclass.org** — Khulna University
  Smart class room. — *Dec 2015-Present*
- **CSE KU Website www.cseku.ac.bd** — CSE Department, Khulna University
  Custom PHP site — *Jan 2013-Present*
- **Asset Management System** — Faculty of Arts, University of Ottawa, Canada
  Web based asset management tool. — *July 2011-Sept 2012*
- **Organization Chart Management Tool** — Comm Directorate, University of Ottawa, Canada
  Graphical organization chart management tool. — *Dec 2010-Feb 2011*
- **McrLab Website (www.mcrlab.uottawa.ca)** — McrLab, University of Ottawa, Canada
  Joomla based web site. — *Sept-Nov, 2010*
- **Electronics Shop Management System** — Habib Electronics, Bangladesh
  Web based electronic shop management system. — *Sep 2009-Mar 2010*
- **FedNet Speech Annotation Tool (www.fednet.net)** — Jaxara IT Ltd, Bangladesh
  Automated speech to text annotation tool. — *Aug-Sept, 2010*
- **ASLA LACES Site (laces.asla.org)** — Jaxara IT Ltd, Bangladesh
  CMS based educational web site. — *Mar-Jul, 2010*
- **AGIS Public Site (www.agis.com)** — Jaxara IT Ltd, Bangladesh
  CMS based public web site for AGIS Inc. — *Jan-Feb, 2010*
- **Groupcare Portal (portal.groupcare.dk)** — Pyxisnet Ltd, Bangladesh
  Web-based collaborative tools in Denmark. — *Apr-Dec, 2007*
- **IT Asset Management** — Pacific Bangladesh Telecom Ltd, Bangladesh
  An inventory management system. — *Dec 2005-Jan 2006*
- **Subscriber Entry Management System** — Pacific Bangladesh Telecom Ltd, Bangladesh
  OCR based automatic form entry tool. — *Jan-Feb, 2006*
- **Programming Contest Control System** — Khulna University, Bangladesh
  Automated team based programming contest control system. — *May-Aug, 2005*
- **Logic Circuit Simulator** — Khulna University, Bangladesh
  Graphical electronic logic circuit simulation tool. — *May-Aug, 2005*

References

- **Dr.-Ing. Abdulmotaleb El Saddik**
  Professor, School of Electrical Engineering and Computer Science (EECS),
  Faculty of Engineering, University of Ottawa
  E-mail: abed@mcrlab.uottawa.ca
  Web: http://www.site.uottawa.ca/~elsaddik

- **Dr. Md. Anisur Rahman**
  Professor, Computer Science and Engineering Discipline,
  Khulna University
  E-mail: shiling73@gmail.com
  Web: http://cseku.ac.bd/~anis/

- **Monjurul Alam Mamun**
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