
BIOGRAPHICAL SKETCH

Provide the following information for the Senior/key personnel and other significant contributors.
Follow this format for each person. **DO NOT EXCEED FIVE PAGES.**

NAME: Sheikh Iqbal Ahamed, PhD

eRA COMMONS USER NAME (credential, e.g., agency login): AHAMED

POSITION TITLE: Professor of Computer Science

EDUCATION/TRAINING (*Begin with baccalaureate or other initial professional education, such as nursing, include postdoctoral training and residency training if applicable. Add/delete rows as necessary.*)

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
Bangladesh University of Engineering and Technology	BSc	04/94	Computer Science and Engineering
Arizona State University, Tempe, AZ	PhD	08/03	Computer Science

A. Personal Statement

I bring my experience as a Senior Scientist and Director of Ubicomp lab (ubicomp.mscs.mu.edu), which I established in 2003. Ubicomp lab has extensive research and development experience in Healthcare with Mobile computing. Currently, Ubicomp lab has 15 members (faculty, Phd and MS students) and over 1 million dollar in Healthcare projects. Of main importance, I am currently the PI and Co-PI of seven grants on mobile phone based systems, and recently completed two projects on which I was also the PI. I bring a strong background in patient monitoring, customized text messaging system, building unobtrusive low-cost indoor locations, pain management tool, mapping technology, and activity monitoring for smart phones.

I have worked with engineering faculty, nursing faculty, phycology medical doctors on 20 healthcare grants over the last 13 years. I have worked with 3 US hospitals and 3 international hospitals. I have closely worked with American Indian populations, Hispanic community on different projects. I have also worked with few leading healthcare companies. My research and development experience in mobile platforms (iPhone, Android, windows mobile, Symbian, Tiny OS) helped me in developing mobile applications needed for any mHealth project. My expertise in cell phones, sensors, tablets, web app and HIPAA compliant cloud systems helped to accomplish the goals of many Healthcare projects. My expertise in mHealth tools and experience with working with the current team have prepared me to lead and manage the entire software systems of the many projects. I have graduated 9 Phd students and 30 MS students in healthcare and Health Engineering area. In addition, I have completed a number of NIH funded mHealth projects. I am a recipient of the Way-Klinger Young Scientist Award 2007, which is one of the highest honors for research at Marquette University.

I have published 150+ peer reviewed journals, conferences, and workshop papers. I have received ten best paper/poster awards in the last seven years.

I serve regularly on international conference program committees in mHealth, software engineering, and mobile/pervasive. I am the Steering Committee Chair of IEEE COMPSAC (compsac.org), which is the second position from the top of 400 researchers. I successfully led the whole organization of 400 researchers of IEEE COMPSAC. It has prepared me very well to lead any big organization. I have served as the Guest Editor of Computer Communications Journal, Elsevier. Here are the relevant recent publications.

- a) Love, R.R., Ferdousy, T., Paudel, B.D., Nahar, S., Dowla, R., Adibuzzaman, M., Ahsan, G.M.T., Uddin, M., Salim, R., and Ahamed, S.I.: Symptom levels in care-seeking Bangladeshi and Nepalese adults with advanced cancer. J Global Onc 2016. (in press)

- b) Md Munirul Haque, Ferdaus Ahmed Kawsar, Mohammad Adibuzzaman, Sheikh Iqbal Ahamed, Richard Love, Rumana Dowla, David Roe, Syed Hossain, Reza Salim: Findings of e-ESAS: a mobile based symptom monitoring system for breast cancer patients in rural Bangladesh. CHI2012: 899-908
- c) Munirul M. Haque, Ferdaus Ahmed Kawsar, Mohammad Adibuzzaman, Sheikh Iqbal Ahamed, Richard Love, Rumana Dowla, David Roe, Tahmina Ferdousy, Reza Selim: Findings of mobile based palliative care system: towards formulating a generic framework for measuring QoL. PervasiveHealth 2014: 1-8
- d) Md Haque, Sheikh Iqbal Ahamed, Richard Love, Ragib Hasan, Rumana Dowla, Tahmina Ferdousy, Reza Salim: e-ESAS: Evolution of a participatory design-based solution for breast cancer (BC) patients in rural Bangladesh. Personal and Ubiquitous Computing 19(2): 395-413 (2015)

B. Positions and Honors

Positions and Employment

2013 – present	Professor, Department of Mathematics, Statistics and Computer Science, Marquette University, Milwaukee, WI
2013 - present	Adjunct Professor, CTSI, Medical College of Wisconsin, Milwaukee, WI
2010 - present	Research Scientist, R2D2 Center, University of Wisconsin at Milwaukee, WI
2008-2013	Associate Professor, Department of Mathematics, Statistics and Computer Science, Marquette University, Milwaukee, WI
2010-2013	Adjunct Associate Professor, CTSI, Medical College of Wisconsin, Milwaukee, WI
2003-2008	Assistant Professor, Department of Mathematics, Statistics and Computer Science, Marquette University, Milwaukee, WI
1998-2003	Research Associate/Instructor, Dept. of Comp. Sc. and Engg, Arizona State University, Tempe, AZ
1995-1997	Lecturer, Dept. of Comp. Sc. and Engg, AhsanUllah Univ. of Engh & Tech., Bangladesh

Honors

2007	Best paper award, 31st Annual International Computer Software and Applications Conference (COMPSAC 2007). Beijing. July
2007	Best paper award, 2nd International Workshop on Ubiquitous & Trustworthy Computing (TwUC 2007). Jakarta. December.
2008	Way-Klinger Young Scholars Award from Fr. Robert Wild, S.J., President of Marquette University.
2009	Best paper award, 33rd Annual International Computer Software and Applications Conference (COMPSAC 2009). Seattle. July.
2010	Best poster award, Forward thinking poster, Marquette University, December.
2011	Best poster award, Forward thinking poster (Int. Category), Marquette University, December.
2012	Honorable mention for Best paper award, ACM's Conference on Human Factors in Computing Systems (CHI), Austin, Texas, USA. May.
2012	Best poster award, Forward thinking poster (Int. Category), Marquette University, December.
2013	Best poster award, Forward thinking poster (Int. Category), Marquette University, December
2013	Best paper award, ACM RACS 2013, November
2014	Best paper award nomination, Pervasive Health 2014, June
2015	Best poster award, Forward thinking poster, Marquette University, December

C. Contribution to Science

1. Rehabilitation engineering

I have been working in rehab engineering for the last 5 years. I have worked extensively with R2D2 center on a number of projects. Here are a few examples.

- a) M. Osman Gani, Casey O'Brien, **Sheikh Iqbal Ahamed**, Roger O. Smith, RSSI Based Indoor Localization for Smartphone Using Fixed and Mobile Wireless Node. COMPSAC:110-117, 2013
- b) Nahid Negar, Drew Williams, Jaclyn Schwartz, **Sheikh Iqbal Ahamed**, Roger Smith, "Smartphone-based Light Intensity Calculation Application for Accessibility Measurement," Proc. of the Rehabilitation

Engineering and Assistive Technology Society of North America (RESNA) Conference (RESNA 2014), Indianapolis, IN, USA, 2014.

- c) Farzana Rahman, Casey O'Brien, Colin Ostberg, Nahid Negar, Duc Do, Drew Williams, **Sheikh I. Ahamed**, Roger Smith, "Measuring Font Signage with a Smartphone Application for ADAAG Compliance Assessment", Proc. of the Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) Conference (RESNA 2013), Bellevue, WA, USA, 2013.
- d) Mridul Khan, **Sheikh I. Ahamed**, Miftahur Rahman, and Roger Smith. A Feature Extraction Method for Real Time Human Activity Recognition on Cell Phones, Third International Symposium on Quality of Life Technology, 6 pages, 2011.

2. Mobile applications

My early publications directly addressed the issues of mobile applications. Lab members and I together have developed and deployed a number applications. I served as the primary investigator or co-investigator in all of these studies. Here are a few publications in the mobile applications area.

- a) Mohammad Adibuzzaman, **Sheikh Iqbal Ahamed**, Richard Love: A personalized model for monitoring vital signs using camera of the smart phone. SAC 2014: 444-449.
- b) Munirul M. Haque, Ferdaus Kawsar, Md. Adibuzzaman, **Sheikh I. Ahamed**, Richard Love, Rumana Dowlah, David Roe, Reza Selim, Findings of e-ESAS: A Mobile Based Symptom Monitoring System for Breast Cancer Patients in Rural Bangladesh, Proceedings of the Association for Computing Machinery (ACM)'s Special Interest Group on Computer-Human Interaction (SIGCHI) Conference on Human Factors in Computing Systems (CHI), May 5-10, 2012, Austin, Texas. (10 pages) [Honorable mention for Best paper]
- c) Munirul M Haque, Ferdaus Kawsar, Md. Adibuzzaman, **Sheikh I. Ahamed**, Richard Love, Rumana Dowlah, David Roe, Reza Selim, Mobile Based health Care Solution for Breast Cancer Patients, Proceedings of the 3rd International Conference on Mobile communication for Development, Delhi, India, 38-50, February 2012. (Acceptance rate: 20%)
- d) Rezwan Islam, **Sheikh I. Ahamed**, Hasan Chowdhury, and Casey O'Brien. Home-Healthcare-Network (H2N): An Autonomous Care-giving System for Elderly People, Information Quality in eHealth, Lecture notes in Computer Science, Springer, 245-262, 2011.

3. Middleware

In addition to the contributions described above, with a team of collaborators, I have worked on middleware. Middleware runs on top of the operating system. It makes the communication transparent to the user and applications and has enabled us to develop additional applications.

- a) Haifeng Li*, Nilothpal Talukder*, Mehrab Monjur*, Chowdhury Sharif Hasan*, and **Sheikh Iqbal Ahamed**. Design and implementation of S-MARKS: A secure middleware for pervasive computing applications, International Journal of System and Software 2009, Volume 82, Issue 10, Elsevier publications, 1657-1677, October 2009.
- b) Moushumi Sharmin*, Shameem Ahmed*, and **Sheikh Iqbal Ahamed**. Design and Implementation of MARKS (Middleware Adaptability for Resource Discovery, Knowledge Usability and Self-healing) Middleware for Pervasive Computing Environments, in Ubiquitous Computing and Communication Journal, Volume 3, 2007.
- c) Vaibhav Tyagi* and **Sheikh Iqbal Ahamed**. Co-Learn: Collaborative Learning Engine - A Vision for Pervasive Collaboration in E-Learning, in the 12th International Conference on Human-Computer Interaction, Lecture Notes in Computer Science (LNCS), Springer, Beijing, China, 833-842, July 22-27, 2007.
- d) Moushumi Sharmin*, Shameem Ahmed*, and **Sheikh Iqbal Ahamed**. MARKS (Middleware Adaptability for Resource Discovery, Knowledge Usability and Self-healing) for Mobile Devices of Pervasive Computing Environments, Proceedings of the Third International Conference on Information Technology: New Generations (ITNG 2006), IEEE CS Press, Las Vegas, NV, 306-313, April, 2006. (Acceptance rate 40%)

4. HCI issues

I have worked on HCI issues extensively. I have tried to use those in real healthcare applications. Here are a few publications in this area.

- a) Drew Williams, Mong-Te Wang, Chih-Hung Chang, **Sheikh Iqbal Ahamed**, William C. Chu: ShowMeHow: Using Smart, Interactive Tutorials in Elderly Software Development. ICOST 2014: 49-58
- b) Moushumi Sharmin, Shameem Ahmed, Munirul Haque, Ahmed Khan, and **Sheikh Iqbal Ahamed**. Design and Implementation of a Virtual Assistant for Healthcare Professionals Using Pervasive Computing Technologies, Journal Springer e&i, vol. 123(4), 112-120, April 2006.
- c) Moushumi Sharmin, Shameem Ahmed, Munirul Haque, Ahmed Khan, and **Sheikh Iqbal Ahamed**. Healthcare Aide: Towards a Virtual Assistant for Doctors, Patients, Nurses and Resident Doctors Using Pervasive Middleware, Proceedings of the 1st Workshop on Ubiquitous and Pervasive Health Care (UbiCare 2006), in conjunction with Fourth Annual IEEE International Conference on Pervasive Computer and Communications (PerCom 2006), IEEE CS Press, Pisa, Italy, 490-495, March 2006. (Acceptance rate 21%)
- d) Rezwana Islam, Nilothpal Talukder, Ian Obermiller, and **Sheikh Iqbal Ahamed**. Usability of Mobile Computing Technologies to Assist Cancer Patients, Proceedings of the HCI and Usability for Medicine and Health Care, Third Symposium of the Workgroup Human-Computer Interaction and Usability Engineering of the Austrian Computer Society, USAB 2007, Graz, Austria, November, 22, 2007, Proceedings. Lecture Notes in Computer Science 4799 Springer, 227-240, 2007.

5. Security, privacy and trust

Any system we build needs security, privacy, and trust. I have addressed security and trust extensively. I have deployed systems with security and privacy. Here are a few publications in this area.

- a) Moushumi Sharmin and **Sheikh Iqbal Ahamed**. A trust-based secure service discovery (TSSD) model for pervasive computing, International Journal of Communications Elsevier, 31, 4281-4293, 2008.
- b) E. Hoque, F. Rahman, M. Zulkernine and **Sheikh Iqbal Ahamed**. Towards Secure Trust Bootstrapping in Pervasive Computing Environment, Proc. of the 11th IEEE International Symposium on High Assurance System Engineering (HASE), IEEE CS Press, Nanjing, China, 89-96, December 2008.
- c) Nilothpal Talukder and **Sheikh Iqbal Ahamed**. FPCS: A Formal Approach for Privacy-aware Context-based Services, Proceedings of the 32nd Annual International Computer Software and Applications Conference (COMPSAC 2008), IEEE CS Press, Turku, Finland, 432-439, July 28-August 1, 2008.
- d) Moushumi Sharmin, Shameem Ahmed, and **Sheikh Iqbal Ahamed**. A Risk-aware Trust Based Secure Resource Discovery (RTSRD) Model for Pervasive Computing, Proceedings of the 2nd IEEE International Workshop on Web and Pervasive Security of PerCom, Hong Kong, 590-595, March 2008.

Full bibliography can be found here: http://dblp.uni-trier.de/pers/hd/a/Ahamed:Sheikh_Iqbal

D. Research Support

Current few significant research support

7R01CA170336-03	Petereit (PI)	10/01/12-09/30/17
-----------------	---------------	-------------------

Agency: NIH

Title: American Indian Mhealth Smoking Dependence Study

Goal: Develop mHealth text messages to help American Indian to quit smoking. The goal of this project is to develop customized messaging system and reporting system

Role: Co-PI but PI for Marquette University

5R01NR013913	Ryan(PI)	10/01/12-09/30/17
--------------	----------	-------------------

Agency: NIH

Title: Efficacy of a m-Health Self-Management Intervention

Goal: Develop mHealth system to motivate women to have calcium rich food and do exercise to prevent osteoporosis. The goal of this project is to develop a self-management framework for woman.

Role: Co-PI but PI for Marquette University

Franco (PI)

01/01/13-12/31/17

Agency: Healthier Wisconsin Partnership Program (HWPP)

Title DryHootch iPeer: A Social & Technology Support Program for Veteran Mental Health
Goal: Develop a software system mPeer: Mobile Detection of High Risk Behavior in Veterans – A Sociotechnical Systems Approach where a veteran can input their daily status and mentors can see daily and weekly status and advise peer veterans
Role: Co-PI but PI for Marquette University

90IF0083 Smith (PI) 09/01/15-8/31/17

Agency: NIDILRR

Title HESTIA: Development of a multi-facet software evaluation for home reintegration: There is an app for that?

Goal: HESTIA will provide an in-depth multi-faceted assessment to identify problems in the home environment that hamper a person's ability to successfully live as independently as possible. The purpose of this system, and long-term goal of this project, is to get a user friendly, thorough, yet efficient home environment assessment in that hands of therapists to enable living and aging at home. Ubicomp lab will develop the mobile software based on the research and design of R2D2 center and Texas Woman University.

Role: Co-PI but PI for Marquette University

R43 MD011350-01 Burhansstipanov (PI) 09/27/2016 – 08/31/2017

National Institute On Minority Health and Health Disparities

Title: "A Tool to Improve Evaluation of Patient Navigation Services in Underserved Populations"

Goal: The purpose of this SBIR project is to develop and evaluate a fully functioning tablet app focused on the Survivorship phase of the cancer care continuum that will allow PNs to easily document activities and interactions.

Role: Co-PI

Completed Significant Research projects

Agency: CTSI Basir (PI) 04/01/15-03/30/16

Title: Prematurity 101: mHealth enhanced prenatal education

Goal: Develop a mHealth educational app containing prematurity-related fetal and neonatal information for parents at risk of premature delivery, and Pilot the mHealth app during the prenatal period among parents determined by their obstetric provider to be at risk for premature delivery.

Role: Co-PI

Subcontract from R2D2 Center, UW Milwaukee Ahamed (PI) 03/01/11-09/30/13

Inertial Navigation Systems

Goal: Develop inertial navigation system using gyroscope and accelerometer. Also develop ADA tool kit (such as a measuring scale). The goal of this project is to develop smart phone applications which will incorporate the above for rehabilitation area.

Role: PI

Agency: CTSI Franco (PI) 04/01/13-03/30/14

Title: Mobile Detection of High Risk Behavior in Veterans – A Sociotechnical Systems Approach

Goal: Develop a software system on smart phones so that it helps to identify risky behavior. The software system also allows mentors to monitor the veteran's mental health.

Role: Co-PI

Int'l Breast Cancer Research Foundation Ahamed (PI) 08/01/10-07/30/14

Title: Breast Cancer Palliation Study Phase I. Phase II and Phase III

Goal: Develop and establish feasibility of multiple and remote site assessments and information transmission using basic (Nokia) cell phone/Android phone for palliative care.

Role: PI