Md Osman Gani, PhD

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CURRENT POSITION

Assistant Professor   August 2020 - Present
Department of Information Systems
University of Maryland, Baltimore County, Catonsville, MD

Faculty Affiliate (Research)   July 2018 – Present
Regenstreif Center for Healthcare Engineering
Purdue University, West Lafayette, IN

EDUCATION

Ph.D. in Computational Sciences   21 May 2017
Department of Math, Statistics, and Computer Science   Advisor: Dr. Sheikh Iqbal Ahamed,
Marquette University, Milwaukee, WI, USA   Professor

M.Sc. in Computational Sciences   26 July 2013
Department of Math, Statistics, and Computer Science   Advisor: Dr. Sheikh Iqbal Ahamed,
Marquette University, Milwaukee, WI, USA   Professor

B.Sc. in Computer Science and Engineering   25 February 2009
Department of Computer Science and Engineering   Advisor: Dr. Hasan Sarwar,
Military Institute of Science and Technology (MIST), Dhaka, Bangladesh   Professor

WORK EXPERIENCE

Visiting Assistant Professor   August 2017 – June 2020
Department of Computer Science and Software Engineering
Miami University, Oxford, OH
Graduate Instructor   Fall 2015 - Spring, 2017
Department of Math, Statistics, and Computer Science
Marquette University, Milwaukee, WI

Teaching and Research Assistant   Fall 2011 – Spring 2015
Department of Math, Statistics, and Computer Science
Marquette University,   Milwaukee, WI

Lecturer   July 2009-Aug 2011
Department of Computer Science and Engineering
Military Institute of Science and Technology (MIST), Dhaka, Bangladesh
Lecturer   May 2009-July 2009
Department of Computer Science and Engineering
International University of Business, Agriculture & Technology, Dhaka,
Bangladesh

TEACHING

Courses lectured:

Institution	Code	Title	Years
University of Maryland, Baltimore County	IS 636	Structured Systems Analysis and Design	2020, 1 time
Miami University	CSE274	Data Abstraction & Structures	2017-2019, 5 times
	CSE271	Object-Oriented Programming	2017, 2019, 2 times
	CSE102	Intro. to Computer Science and Software Engineering	2018, 1 time
Marquette University	COSC1020	Object-Oriented Software Design	2016, 1 time
Military Institute of Science & Technology	CSE1	Structured Programming Language	2010-11, 2 times
	CSE4	Machine Learning	2011, 1 time
	CSE4	Computer Interfacing	2010, 1 time

STUDENTS MENTORED/THESIS COMMITTEE

Students mentored for research as an advisor or co-advisor. Listed number of publications, current position, and achievement whenever applicable.

Masters Theses Committee (2)   Miami University
- **Valeria Mokrenko** Outcomes: 2 publications
- **Shrawani Silwal** Outcomes: 2 publications

Undergraduate Theses (6)   Military Institute of Science and Technology
- **Amit Kumar Saha**, Software Engineer at Walmart
- **Taskina Fayezeen**, Software Engineer at Miami University
- **Abdullah Al-Mamun,** Executive Magistrate at Bangladesh Government
- **Nafia Malik,** Completed MS from WSU, Kansas
- **Sarah Ashraf,** Completed MS from Western Sydney University, Sydney
- **Bushra Hossain**, Lecturer at Green University Bangladesh

Senior Design (9)   Miami University
- **John Hata, Nick Wayne, Nick Jarvis** (*Best project out of 36 projects, 2019*)
- **Austin Gee, Yiping He, Xiting Liang, Christian Sitzman, Zhongxuan Song**

Undergraduate Research Students (5)   Miami University
- **Manh Nguyen** Outcomes: 1 publication, Internship at Google
- **Steven Yu** Outcomes: 1 publication
- **John Hata** Outcomes: 1 publication, 2 posters
- **Noah Dunn** Worked on Causal Inference
- **Jimmy Warren** Worked on Causal Inference

GRANTS/AWARDS AND HONORS

- Grant, PI, CRII:SCH: A Causal Inference Framework to Estimate the Effect of Oxygenation in Intensive Care Units, National Science Foundation, (Under Review, $175,000).
- Grant, Co-PI, SCI-WheelShare: Crowd-sensed Accessible Routing through Surface Classification for Spinal Cord Injury (SCI) Patients, Paralyzed Veterans of America (Under Review, $150,000).
- Grant, PI, $5400, Summer Research Fund (2 undergraduate students), Miami University 2018-2019.
- Best Research Poster, Forward Thinking Poster Session, 2015, Marquette University, Milwaukee, WI.
- NSF (National Science Foundation) Travel Grant, ACM HotMobile 2016, St Augustine, Florida.
- Graduate Assistantship, Fall 2011 to May 2017, Marquette University, Milwaukee, WI, USA.
- Computational Sciences Summer Research Fellowship, 2015, Marquette University, Milwaukee, WI.

- Computational Sciences Summer Research Fellowship, 2013, Marquette University, Milwaukee, WI.
- Computational Sciences Summer Research Fellowship, 2012, Marquette University, Milwaukee, WI.
- National Digital Innovation Award (Runner Up) 2011 from Ministry of Science & ICT, Bangladesh for the project "Bangla Text to Braille Translation System".
- Champion, BASIS (Bangladesh Association of Software & Information Services) IT Innovation Search Programme, 2011 for the project "Bangla Text to Braille Translation System".
- 7th place in the ACM International Collegiate Programming Competition, Asia Regional Dhaka Site Event, 2008, Dhaka, Bangladesh.
- 1st place in the MIST Programming Contest 2008, Dhaka, Bangladesh.
- 10th place in the ULAB National Programming Contest, 2008, Dhaka, Bangladesh.
- 11th place in the First IUT National ICT Fest Programming Contest, 2008, Dhaka, Bangladesh.
- University Merit Scholarship in Level-2, Military Institute of Science and Technology, Dhaka, Bangladesh.

PROFESSIONAL SERVICE

- **General Co-Chair,** 6th IEEE International Workshop on Pervasive Context-Aware Smart Cities and Intelligent Transportation Systems, PerCom 2021
- **Artifacts Co-Chair,** 18th IEEE International Conference on Pervasive Computing and Communications (PerCom), 2020
- **General Co-Chair**, The First IEEE International Workshop on Integrated Smart Healthcare (WISH), IEEE COMPSAC 2019
- **Program Committee Member**, ACM Symposium on Applied Computing (SAC), 2017, 2018, 2019
- **Reviewer**, IEEE Transactions on Mobile Computing
- **Reviewer,** IEEE Percom 2019, IEEE MASS 2020
- **Systems and Software Chair**, IEEE COMPSAC 2017
- **Reviewer**, the 41st IEEE COMPSAC, 2017.
- **Lab Manager**, UbiComp Lab, Marquette University, 2014 to 2017.
- **Sub-Reviewer**, ACM RACS 2015, ICDCN 2019
- **Volunteer**, ACM HotMobile Workshop, Florida, USA 2016
- **Judge** of ACM Marquette University Programming Competition for High School, 2016
- **Coach**, Programming Contest Team, MIST, 2009-2011.
- **Chief Judge and Problem Setter**, MIST Programming Contest, 2010.

PUBLICATIONS

Peer-reviewed conference, journal articles, book chapter, and ArXiv:

1. **Md Osman Gani**, Shravan Kethireddy, Marvi Bikak, Paul Griffin, Mohammad Adibuzzaman, "Structural Causal Model with Expert Augmented Knowledge to Estimate the Effect of Oxygen Therapy on Mortality in the ICU", ArXiv preprint arXiv: 2010.14774 [cs.LG], 2020.
2. Marvi Bikak, Shravan Kethireddy, **Md Osman Gani**, Mohammad Adibuzzaman, "Structural Causal Model with Expert Augmented Knowledge to Estimate the Effect of Oxygen Therapy", CHEST, Volume 158, Issue 4, A636, October 2020.
3. Shrawani Silwal, Vaskar Raychoudhury, Snehanshu Saha, **Md Osman Gani**, "A Dynamic Taxi Ride Sharing System Using Particle Swarm Optimization", Proceedings of the IEEE 17th International Conference on Mobile Ad Hoc and Sensor Systems (MASS), Accepted for publication, December 10-13, 2020.
4. **Md Osman Gani**, Vaskar Raychoudhury, Janick Edinger, Valeria Mokrenko, Zheng Cao, Ce Zhang "Smart Surface Classification for Accessible Routing through Built Environment - A Crowd-sourced Approach", Proceedings of the ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation, Pages 11-20, November 2019.

5. **Md Osman Gani**, Taskina Fayezeen, Richard J. Povinelli, Roger O. Smith, Muhammad Arif, Ahmed J. Kattan, Sheikh Iqbal Ahamed, "A light weight smartphone based human activity recognition system with high accuracy", Journal of Network and Computer Applications, Elsevier, Volume 141, Pages 59-72, 2019, https://doi.org/10.1016/j.jnca.2019.05.001

6. **Md Osman Gani**, G M T Ahsan, Amit Kumar Saha, Sheikh Iqbal Ahamed, Roger O. Smith, "A Novel Framework to Recognize Complex Activity", Proceedings of the IEEE 41st Annual Computer Software and Applications Conference, Pages 948-956, July 2017.

7. Amit Kumar Saha, GMT Ahsan, **Md Osman Gani**, Sheikh Iqbal Ahamed, "Personalized Pain Study Platform using Evidence-based Continuous Learning Tool", Proceedings of the IEEE 41st Annual Computer Software and Applications Conference Workshops, Pages 490-495, July 2019.

8. Nicholas Jarvis, John Hata, Nicholas Wayne, Vaskar Raychoudhury, **Md Osman Gani,** "MiamiMapper: Crowd Analysis using Active and Passive Indoor Localization through Wi-Fi Probe Monitoring", Proceedings of the 15th ACM Symposium on QoS and Security for Wireless and Mobile Networks, Pages 1-10, November 2019

9. Shrawani Shilwal, Vaskar Roychoudhury, **Md Osman Gani,** "A Survey of Taxi Ride Sharing System Architectures", Proceedings of the IEEE International Conference on Smart Computing (SMARTCOMP) Workshop, Pages 144-149, June 2019.

10. Manh Nguyen, **Md Osman Gani**, Vaskar Roychoudhury, "Yours Truly? Accessibility of Our Personal Data in the Connected World", Proceedings of the IEEE International Conference on Pervasive Computing and Communications Workshops, Pages 292-297, March 2019.

11. G M T Ahsan, **Md Osman Gani**, MD K Hasan, Sheikh I Ahamed, W Chu, Mohammad Adibuzzaman, Joshua Field, "A Novel Real-Time Non-Invasive Hemoglobin Level Detection Using Video Images from Smartphone Camera", In proceeding of the IEEE 41st Annual Computer Software and Applications Conference Workshop, Pages 967-972, July 2017.

12. **Md Osman Gani**, Golam Mushih Tanimul Ahsan, Duc Do, Drew Williams, Mohammed Balfas, Sheikh Iqbal Ahamed, Muhammad Arif, Ahmed J. Kattan, "A Novel Approach for localization in crowded area without GPS", In proceedings of the IEEE Healthcom, Pages 1-6, 2016**.**

13. Williams Drew, **Md Osman Gani**, Ivor D, "Challenges in Developing Applications for Aging Populations", Optimizing Assistive Technologies for Aging Populations, Pages 1-21, 2015, IGI Global.

14. **Md Osman Gani**, Taskina Fayezeen, Sheikh Iqbal Ahamed, Dennis B. Tomashek, Roger O. Smith, "Simple Activity Recognition Using Smartphone Technologies For In-Home Rehabilitation", In proceedings of the RESNA Annual Conference, Paper ID 151, 2015. [Online library, does not maintain page number]

15. **Md Osman Gani**, Sheikh Iqbal Ahamed, Samantha Ann Davis, Roger O. Smith, An Approach to Complex Functional Activity Recognition using Smartphone Technologies, In proceedings of the RESNA Annual Conference, Paper ID 152, 2014. [Online library, does not maintain page number]

16. F. Rahman, **Md Osman Gani**, G. M. T. Ahsan, and S. I. Ahamed, "Seeing beyond visibility: A Four Way Fusion of User Authentication for Efficient Usable Security on Mobile Devices", In proceedings of the IEEE 8th International Conf. on Software Security and Reliability-Companion, Pages 121-129, 2014.

17. N. Johnson, O. Bree, E. Lalley, K. Rettler, **Md Osman Gani**, S. Ahamed, "Effect of a Social Script iPad Application for Children with Autism Going to Imaging", Journal of Pediatric Nursing, Volume 29, Issue 6, Pages 651-659, 2014.

18. **Md Osman Gani**, Casey O'Brien, S I Ahamed, Roger O Smith, "RSSI based Indoor Localization for Smartphone using Fixed and Mobile Wireless Node", In proceedings of the IEEE 37th Annual Computer Software and Applications Conference, Pages 110-117, 2013.

19. S I Ahamed, C S Hasan, M M Haque, **Md Osman Gani**, "Towards TTP-Free Lightweight Solution for Location Privacy Using Location-Based Anonymity Prediction", In proceedings of the ACM Research in Applied Computation Symposium, Pages 293-297, 2011.

20. **Md Osman Gani**, SIB Ashraf, N Malik, B Hossain, MA Hossain, H Sarwar "Recursive implementation of Markov Model, A new approach". In proceedings of the 25th IEEE International Conference on Advanced Information Networking and Applications Workshop, Pages 216-220, 2011.

21. FM Mahbub-ul-Islam, **Md Osman Gani**, Samiul Azam, Ahmed Imtiaz Khan, and SA Hossain, "Computational Model for Bangla Text to Braille Translation", In proceedings of the International Conference on Computer Processing of Bangla, Paper ID 23, 2011, Bangladesh. [Online library, does not maintain page number]

22. Ahmed Imtiaz Khan, Samiul Azam, **Md Osman Gani**, FM Mahbub-ul-Islam and SA Hossain, "Architecture & Implementation of Bangla Text to Braille Translation", In proceedings of the International Conference on Computer Processing of Bangla, Paper ID 24, 2011, Bangladesh. [Online library, does not maintain page number]
23. **Md Osman Gani**, Hasan Sarwar, Chowdhury Mofizur Rahman "Prediction of state of wireless network using Markov and Hidden Markov Model", Journal of Networks, Volume 4, Issue 10, Pages 976-984, 2009.
24. **Md Osman Gani**, Iftekhar Jahan Mehedi, Mehnaz Seraj, Hasan Sarwar, and Chowdhury Mofizur Rahman, title "Prediction of the density of the Active Wireless device using Markov Model", In proceedings of the IEEE International Conference on Computer and Information Technology, Pages 691-695, 2008.

Abstracts/Poster

1. John Hata, **Md Osman Gani**, and Vaskar Raychoudhury. "CARE: Campus-wide Accessible Route Estimation through Surface Analysis", In Proceedings of the 20th ACM International Workshop on Mobile Computing Systems and Applications, Pages 173-173, 2019.
2. **Md Osman Gani**, Taskina Fayezeen, Sheikh Iqbal Ahamed, Richard J. Povinelli, "Computationally Efficient Human Activity Modelling and Its Application as a Service in Android Framework", ACM HotMobile, 2016, FL, USA.
3. **Md Osman Gani**, GMT Ahsan, Amit K. Saha, Sheikh Ahamed, "Smart Spectacle Clip to Train and Prevent Fall", Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2016.
4. Taskina Fayezeen, **Md Osman Gani**, Sheikha Iqbal Ahamed, "mHealth System for the Patients with Arthritis", Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2015. (**Best Research Poster**)
5. **Md Osman Gani**, Duc Do, Balfas, Drew Williams, G M Tanimul, Sheikha Iqbal Ahamed, "Ubitrack: Locating lost pilgrims in the crowded area of Makkah during Hajj", Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2014.
6. Piyush Saxena, **Md Osman Gani**, Sheikh Iqbal Ahamed, Stephen Yau, "Situation-Aware Cyber-Human Environments for Enriched Assisted Living", Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2014.
7. Johnson, N., Kabobel, O., Lalley, E., Retler, K., Grande, P., Unetesch, R., Coffey, M., Haberlin, S., **Gani, Md O.**, & Ahamed, S.I. Effect of an IPAD Application for Medical Imaging Procedure Preparation for Children with Autism Spectrum Disorder. International Family Nursing Conference. Minneapolis, June 19–22, 2013.
8. Johnson, N., Kabobel, O., Lalley, E., Retler, K., Grande, P., Unetesch, R., Coffey, M., Haberlin, S., **Gani, Md O.**, & Ahamed, S.I. Effect of an IPAD Application for Medical Imaging Procedure Preparation for Children with Autism Spectrum Disorder. The Fly-In Research Conference at Children's Hospital of Wisconsin. Milwaukee, Wisconsin, May 23-24, 2013.
9. Johnson, N., Kabobel, O., Lalley, E., **Gani, Md O.**, & Ahamed, S. Medical Imaging Procedure Preparation for children with Autism with an IPad App Social Script. Building Bridges Conference, Milwaukee, Wisconsin, May 15, 2013.
10. Johnson, N., Kabobel, **Gani, Md O.**, & Ahamed, S. IPAD Application for Imaging Preparation Compared to Regular Care: Two Case Studies of Children with Autism. Midwest Nursing Research Society Conference, Chicago, Illinois, March 7-10, 2013.
11. **Md O Gani**, S I Ahamed, Towards Fall Prevention Using Human Activity Genome on Smartphones, Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, Nov. 2011, pp26
12. M Adibuzzaman, F A Kawsar, M M Haque, **Md O Gani**, N Steinhafel, S I Ahamed, Multimodal Ubiquitous Affect Detection for Social Network, Proceedings of the Forward Thinking Poster Session, Marquette University, WI, USA, November 2011, pp22