

# MOHAMMAD ADIBUZZAMAN

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## EDUCATION

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<b>Doctor of Philosophy (Ph.D.), Computational Sciences</b>	2015
Marquette University, Milwaukee, Wisconsin, USA	
<b>Master of Science (M.Sc.), Computational Sciences</b>	2012
Marquette University, Milwaukee, Wisconsin, USA	
<b>Bachelor of Science (B.Sc.)</b>	2008
Bangladesh University of Engineering and Technology (BUET), Department of Computer Science and Engineering	

## WORK EXPERIENCE

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<b>Regenstrief Center for Healthcare Engineering, Purdue University</b>	2018–Present
<i>Research Scientist</i>	
<b>CausalAI Lab, Computer Science, Purdue University</b>	2018–2019
<i>Research Scientist</i>	
<b>Regenstrief Center for Healthcare Engineering, Purdue University</b>	2015–2018
<i>Assistant Research Scientist</i>	
<b>US Food and Drug Administration</b>	2013–2014
<i>Oak Ridge Institute of Science and Engineering Fellow</i>	
<b>International Breast Cancer Research Foundation and Marquette University</b>	2012
<i>Research Assistant</i>	
<b>Marquette University</b>	2010–2015
<i>Research Assistant</i>	
<b>Marquette University</b>	2010–2015
<i>Instructor</i>	
<b>National University of Singapore (NUS)</b>	2010
<i>Junior Research Intern</i>	
<b>Structured Data Systems Limited (SDSL)</b>	2007–2009
<i>Software Engineer</i>	
<b>University of Asia Pacific</b>	2009
<i>Lecturer</i>	

## PROFESSIONAL MEMBERSHIP

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<b>American Medical Informatics Association (AMIA)</b>	2017–current
<i>Member</i>	
<b>Intensive Care Unit Working Group (AMIA)</b>	2017–current
<i>Member</i>	

<b>Institute of Electrical and Electronics Engineers (IEEE)</b> <i>Member</i>	2016
<b>Association for Computing Machinery (ACM)</b> <i>Member</i>	2014

## HONORS

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<b>Above and Beyond Award, EVPRP, Purdue University</b>	2018
<b>ORISE Fellowship, US FDA, White Oak, MD</b>	2013–2014
<b>Best Paper Award in ACM RACS, Montreal, Canada</b>	2014
<b>Best Poster Award, Marquette University, WI</b>	2011
<b>Best Poster Award, Marquette University, WI</b>	2010

## PUBLICATIONS

### Methods

1. Chih-Hao Fang, Ananth Grama, Paul Griffin, Fatemeh Rouzbeh, and Mohammad Adibuzzaman. Optic: Optimal treatment policy using reinforcement learning and structural causal model. *Under review*
2. Riddhiman Adib, Sheikh Iqbal Ahamed, Paul Griffin, and Mohammad Adibuzzaman. A causally formulated hazard ratio estimation through backdoor adjustment on structural causal model. *Under review*
3. Amber M Johnson, Mohammad Adibuzzaman, Paul Griffin, and Marvi Bikak. Generating evidence for chronic obstructive pulmonary disease (COPD) clinical guidelines using ehr data. *medRxiv*, page 19006023, 2019
4. Yao Chen, Xiao Wang, Yonghan Jung, Vida Abedi, Ramin Zand, Marvi Bikak, and Mohammad Adibuzzaman. Classification of short single-lead electrocardiograms (ECGs) for atrial fibrillation detection using piecewise linear spline and XGBoost. *Physiological measurement*, 39(10):104006, 2018
5. Brett Collar, Marvi Bikak, Paul Brown, Zachary Pitluk, and Mohammad Adibuzzaman. Second largest eigenvalue of the transition probability matrix for the Markov chain constructed from the arterial blood pressure waveform is not correlated to shock index in hemorrhagic human subjects. *Aisthesis: Honors Student Journal*, 9(1):37–43, 2018
6. Mohammad Adibuzzaman, David Strauss, Stephen Merrill, Lorian Galeotti, and Christopher Scully. Evaluation of machine learning algorithms for multi-parameter patient monitoring., 2014
7. Mohammad Adibuzzaman, George C Kramer, Lorian Galeotti, Stephen J Merrill, David G Strauss, and Christopher G Scully. The mixing rate of the arterial blood pressure waveform markov chain is correlated with shock index during hemorrhage in anesthetized swine. In *2014 36th Annual International Conference of the IEEE Engineering in Medicine and Biology Society*, pages 3268–3271. IEEE, 2014

### Systems

1. Fatemeh Rouzbeh, Ananth Grama, Pual Griffin, and Mohammad Adibuzzaman. Collaborative cloud computing framework for health data with open source technologies. *In preparation*

2. Mohammad Adibuzzaman, Poching DeLaurentis, Jennifer Hill, and Brian Benneyworth. Big data in healthcare– the promises, challenges and opportunities from a research perspective: A case study with a model database. In *AMIA Annual Symposium*, pages 384–392, 2017
3. Mohammad Adibuzzaman, Ken Musselman, Alistair Johnson, Paul Brown, Zachary Pitluk, and Ananth Grama. Closing the data loop: An integrated open access analysis platform for the mimic database. In *2016 Computing in Cardiology Conference (CinC)*, pages 137–140. IEEE, 2016
4. Mohammad Adibuzzaman, Colin Ostberg, Sheikh Ahamed, Richard Povinelli, Bhagwant Sindhu, Richard Love, Ferdaus Kawsar, and Golam Mushih Tanimul Ahsan. Assessment of pain using facial pictures taken with a smartphone. In *2015 IEEE 39th Annual Computer Software and Applications Conference*, volume 2, pages 726–731. IEEE, 2015
5. Munirul M Haque, Ferdaus Kawsar, M Adibuzzaman, SI Ahamed, R Love, R Dowla, D Roe, and R Salim. Mobile based health care solution for breast cancer patients. *Proceedings of M4D 2012 28-29 February 2012 New Delhi, India*, 28(29):23, 2012
6. Mohammad Adibuzzaman, Niharika Jain, Nicholas Steinhafel, Munir Haque, Ferdaus Ahmed, Sheikh Ahamed, and Richard Love. In situ affect detection in mobile devices: a multimodal approach for advertisement using social network. *ACM SIGAPP Applied Computing Review*, 13(4):67–77, 2013
7. Mohammad Adibuzzaman, Niharika Jain, Nicholas Steinhafel, Munir Haque, Ferdaus Ahmed, Shiekh Iqbal Ahamed, and Richard Love. Towards in situ affect detection in mobile devices: a multimodal approach. In *Proceedings of the 2013 Research in Adaptive and Convergent Systems*, pages 454–460. 2013
8. Chowdhury Hasan, Mohammad Adibuzzaman, Ferdaus Kawsar, Munirul Haque, and Sheikh Iqbal Ahamed. Pryguard: a secure distributed authentication protocol for pervasive computing environment. In *International Conference on Industrial, Engineering and Other Applications of Applied Intelligent Systems*, pages 135–145. Springer, Berlin, Heidelberg, 2011
9. Ferdaus A Kawsar, Md Munirul Haque, Mohammad Adibuzzaman, Sheikh Iqbal Ahamed, Md Uddin, Richard Love, David Roe, Rumana Dowla, Tahmina Ferdousy, Reza Selim, et al. e-esas: improving quality of life for breast cancer patients in developing countries. In *Proceedings of the 2nd ACM international workshop on Pervasive Wireless Healthcare*, pages 9–14, 2012
10. Munirul M Haque, Ferdaus Kawsar, M Adibuzzaman, SI Ahamed, R Love, R Dowla, D Roe, and R Salim. Mobile based health care solution for breast cancer patients. *Proceedings of M4D 2012 28-29 February 2012 New Delhi, India*, 28(29):23, 2012
11. Mohammad Adibuzzaman, Colin Ostberg, Sheikh Ahamed, Richard Povinelli, Bhagwant Sindhu, Richard Love, Ferdaus Kawsar, and Golam Mushih Tanimul Ahsan. Assessment of pain using facial pictures taken with a smartphone. In *2015 IEEE 39th Annual Computer Software and Applications Conference*, volume 2, pages 726–731. IEEE, 2015
12. Golam MT Ahsan, Md O Gani, Md K Hasan, Sheikh I Ahamed, William Chu, Mohammad Adibuzzaman, and Joshua Field. A novel real-time non-invasive hemoglobin level detection using video images from smartphone camera. In *2017 IEEE 41st Annual Computer Software and Applications Conference (COMPSAC)*, volume 1, pages 967–972. IEEE, 2017

## Clinical Applications

1. Ayesha Khan, Vida Abedi, Farhan Ishaq, Alireza Sadighi, Mohammad Adibuzzaman, Martin Matsumura, Neil Holland, and Ramin Zand. Fast-track long term continuous heart monitoring in a stroke clinic: A feasibility study. *Frontiers in Neurology*, 10:1400, 2019
2. M Bikak, R Adib, W Ingram, P Griffin, and M Adibuzzaman. Outcomes of use of antipsychotic for

- delirium in the ICU: A big data approach. In *D50. CRITICAL CARE: THE METAMORPHOSIS-PAIN, SEDATION, DELIRIUM, ICU-ACQUIRED WEAKNESS, AND PALLIATIVE CARE*, pages A6672–A6672. American Thoracic Society, 2019
3. Marvi Bikak, Amber Johnson, and Mohammad Adibuzzaman. Application of markov modeling to assess outcomes in COPD. *Chest*, 156(4):A152, 2019
  4. M Bikak, M Adibuzzaman, Y Jung, Y Yih, and E Bareinboim. Regenerating evidence from landmark trials in ards using structural causal models on electronic health record. In *B104. CRITICAL CARE: BIG DATA IN HEALTH CARE-PREDICTIVE ANALYTICS, CLINICAL DECISION SUPPORT, AND RAPID RESPONSE*, pages A4290–A4290. American Thoracic Society, 2018
  5. Mina Ostovari, Denny Yu, Shan Xie, Qing Ye, Bhagyashree Katare, Mohammad Adibuzzaman, Kenneth J Musselman, Roshanak Nateghi, Cleveland G Shield, and Yuehwern Yih. Bridging the gap between population needs and barriers into onsite clinic use. In *Proceedings of the Human Factors and Ergonomics Society Annual Meeting*, volume 60, pages 1809–1812. SAGE Publications Sage CA: Los Angeles, CA, 2016
  6. Richard Reed Love, Tahmina Ferdousy, Bishnu D Paudel, Shamsun Nahar, Rumana Dowla, Mohammad Adibuzzaman, Golam Mushih Tanimul Ahsan, Miftah Uddin, Reza Salim, and Sheikh Iqbal Ahamed. Symptom levels in care-seeking bangladeshi and nepalese adults with advanced cancer. *Journal of global oncology*, 3(3):257–260, 2017

## TALKS

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<b>Discovery Park Convergence Conference, Purdue University, USA</b>	11/10/2019
LATICE: Framework for Longitudinal Analysis of Time-Course Data from Patient Generated Health Data	
<b>Hamad Bin Khalifa University, Doha, Qatar, Guest lecturer (online)</b>	04/09/2019
Big Data in Health Sciences	
<b>Society of Critical Care Medicine (SCCM) 48th Critical Care Congress, San Diego, California</b>	02/17/2019
Methods for Quantifying Efficacy-Effectiveness Gap of Randomized Controlled Trials: Examples in ARDS	
<b>Extremely Large Database (XLDB), Stanford University, USA</b>	04/30/2018
Big Data in the Intensive Care Unit	
<b>AMIA Webinar</b>	08/17/2017
An Open-access High Performance Computing System for Developing Research Applications (Apps)	
<b>EMBC 2014 Engineering in Medicine and Biology, Chicago, Illinois</b>	08/26/2014
Closing the Data Loop: An Integrated Open Access Analysis Platform for the MIMIC Database	
<b>Computing in Cardiology, Vancouver, Canada</b>	09/12/2016
A Novel Index to Monitor Physiological Systems from the Arterial Blood Pressure Waveform during Hemorrhage	
<b>US Food and Drug Administration (US FDA), Division of Biomedical Physics, White Oak, Maryland</b>	08/12/2014

## MENTORING (PH.D. STUDENTS)

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<b>Yonghan Jung</b> Ph.D. Candidate (Computer Science), Advisor Elias Barienboim	Fall 2017- Current
<b>Fatemeh Rouzbeh</b> Ph.D. Candidate (Computer Science), Advisor Ananth Grama	Fall 2018–Current
<b>Mobasshir Arshed Naved</b> Ph.D. Candidate (Industrial Engineering), Advisor Paul Griffin	Fall 2019–Current
<b>Chih-Hao Fang</b> Ph.D. Candidate (Computer Science), Advisor Ananth Grama	Fall 2019–Current
<b>Riddhiman Adib</b> Ph.D. Candidate (Computer Science, Marquette University), Advisor Sheikh Iqbal Ahamed	Fall 2018–Current
<b>Brett Meyers</b> Ph.D. Candidate (Mechanical Engineering), Advisor Pavlos Vlachos	Fall 2018–Current
<b>Amber Johnson</b> (Ph.D. (Computer Science), Advisor Bharat Bhargava)	Fall 2017– Summer 2019
<b>Yao Chen</b> Yao Chen (Ph.D. Candidate (Statistics), Advisor Xiao Wang)	Fall 2017– Summer 2018

## RESEARCH SUPPORT

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<b>Grand Challenges in Neuroscience Grant</b> Data-science infrastructure for precision auditory neuroscience. The seed project is to establish infrastructure and protocols for the rapid accumulation of harmonized multidisciplinary cross-species data for precision auditory neuroscience, including an Audiology Diagnostics Core for human subjects. (Role-coPI)	11/01/2019-10/30/2019
<b>Indiana Family and Social Services Administration (FSSA)</b> Addressing Opioid Crisis and Long Term Care Cost in the State of Indiana. (\$12M) (Role: I)	01/01/19–present
<b>Discovery Park Integrative Data Science Initiative, Purdue University</b> Causally-driven Healthcare Science From Observational and Experimental Studies to Personalized and Improved Patient Outcomes. (\$265,000) (Role: PI)	06/01/19–present
<b>University Core Facility Research Equipment Program, Purdue University</b> Regenstrief Information Commons: A Cloud Computing Infrastructure for Reproducibility and Share-ability. (\$100,000) (Role: Co-PI)	03/01/18
<b>Regenstrief Center for Healthcare Engineering (RCHE)</b> Identifying Causation from Observational and Experimental Data. (Role: PI)	05/01/17– present