

MOHAMMAD ADIBUZZAMAN

Suite 225, Mann Hall, 203 S Martin Jischke Dr., West Lafayette, Indiana, 47909

(+1)4145789927 ◊ madibuzz@purdue.edu ◊ adibzaman.github.io

EDUCATION

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

WORK EXPERIENCE

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

PROFESSIONAL MEMBERSHIP

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

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

HONORS

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

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

MENTORING (PH.D. STUDENTS)

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

RESEARCH SUPPORT

Grand Challenges in Neuroscience Grant 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
Indiana Family and Social Services Administration (FSSA) Addressing Opioid Crisis and Long Term Care Cost in the State of Indiana. (\$12M) (Role: I)	01/01/19–present
Discovery Park Integrative Data Science Initiative, Purdue University Causally-driven Healthcare Science From Observational and Experimental Studies to Personalized and Improved Patient Outcomes. (\$265,000) (Role: PI)	06/01/19–present
University Core Facility Research Equipment Program, Purdue University Regenstrief Information Commons: A Cloud Computing Infrastructure for Reproducibility and Share-ability. (\$100,000) (Role: Co-PI)	03/01/18
Regenstrief Center for Healthcare Engineering (RCHE) Identifying Causation from Observational and Experimental Data. (Role: PI)	05/01/17– present