Riddhiman Adib

Ph.D. Candidate, Graduate Assistant

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Education

Ph.D. in Computer Science *(Graduating)*

Marquette University (Advisor: Dr. Sheikh Iqbal Ahamed)

Aug. 2017 – *(Expected)* May 2022 | GPA: 3.96 | Milwaukee, WI, USA

- **Ph.D. Dissertation title:** Causal Inference in Healthcare: Approaches to Causal Modeling and Reasoning through Graphical Causal Models
- **Summary:** In collaboration with Regenstrief Center for Healthcare Engineering, Purdue University for three years, and under the mentorship of Dr. Mohammad Adibuzzaman, my research work covered survival analysis with structural causal models, causal information merging from data and background knowledge, and explored effects of drug interventions from electronic healthcare data.

M.S. in Computing

Marquette University

Aug. 2017 – May. 2020 | GPA: 3.96 | Milwaukee, WI, USA

- **Specialization**: Big Data and Data Analysis
- **Relevant Courses**: Advanced Machine Learning, Advanced Data Science, Introduction to Intelligent Systems, Social and Ethical Implications of Data

B.Sc. in Electrical and Electronics Engineering

Bangladesh University of Engineering and Technology (BUET)

May. 2010 – Sep. 2015 | GPA: 3.32 | Dhaka, Bangladesh

Professional Experience

Visiting Scholar (Summer Research Intern)

Regenstrief Center for Healthcare Engineering, Purdue University

Summer 2019 | West Lafayette, IN

- **Causal Inference:** Exploring underlying causal structure from observational dataset on Delirium patients in ICU, quantifying efficacy of anti-psychotic drugs.

Graduate Assistant

Ubicomp Lab, Marquette University

Fall 2017 – Present | Milwaukee, WI

- **Computer Science Summer Research Fellow:** *(Summer 2021)* Proposition of building a pipeline for transportability of experimental studies with Causal Inference
- **Graduate Research Assistant:** *(Jun. 2018 – May 2021)* Research Assistant in multiple mHealth projects, involving 'Self-management Intervention for Parents of Transplanted Children', 'Veteran Mental Health Crisis Management'
- **Graduate Teaching Assistant:** *(Aug. 2017 – May 2018, Aug. 2021 – Ongoing)* Teaching Assistant for Calculus 1 (Fall 2017), Calculus 2 (Spring 2018), and Programming languages (Fall 2021)

Software Engineer

Harriken.com Limited

Oct. 2015 – May. 2017 | Dhaka, Bangladesh

- **Android Lead:** *(Apr. 2016 – May. 2017)* Executing existing app expansions and related research & development
- **Software Developer:** *(Oct. 2015 – Mar. 2016)* Building the mobile solution from scratch on Android Platform and related web services development and deployment on Amazon Web Services (AWS)

Objective

Actively seeking a postdoctoral research opportunity in broader AI in healthcare, particularly, in Causal Inference and applied ML.

Research Experience

Primary Research Projects:

- **Causal Inference:** Application of causal inference framework in finding effects of anti-psychotic drug intervention on delirium patients in the ICU and related causal explorations
- **Family Self-management Intervention:** Smartphone application driven intervention for self-management of family members of pediatric transplant patients

Additional Projects:

- **Veteran Crisis Management:** Crisis management in PTSD-affected veterans via peer-mentor relationship using mHealth software tools
- **Diabetic Retinopathy:** Development of community telemedicine framework for diabetic retinopathy screening, among minority population in Milwaukee, WI
- **Electronic Palliative Care:** Electronic Palliative care solution for critically ill people in developing countries

Open-source contributions

- **BottomNavBar:** Open-source Android library to add bottom navigation bar to application ***(202 Github stars)***
- **FormMaster:** Open-source Android library to easily build and use larger forms ***(150 Github stars)***

Skills

Python | Java | Matlab | SQL | Jupyter Notebook | Pandas | Django | Android Framework | AWS | Causal Inference | Machine Learning | mHealth | Data Science

Journal and Conference Publications

- Adib, R., Das, D., Ahamed, S.I. and Lerret, S.M., 2021, November. Design and development of myFAMI application framework: a mHealth self-management intervention for family members of pediatric transplant recipients. JMIR nursing.
- Lerret, S.M., Schiffman, R., White-Traut, R., Medoff-Cooper, B., Ahamed, S.I., Adib, R., Liegl, M., Alonso, E., Mavis, A., Jensen, K. and Peterson, C.G., 2021. Feasibility and Acceptability of a mHealth Self-Management Intervention for Pediatric Transplant Families. Western journal of nursing research, p.01939459211024656.
- Johnson, N.L., Lerret, S., Polfuss, M., Gralton, K., Gibson, C., Ahamed, S.I., Adib, R., White-Traut, R., Brown, R.L. and Sawin, K.J., 2021. One Size Does Not Fit All: Discharge Teaching and Child Challenging Behaviors. Western Journal of Nursing Research, p.01939459211018829.
- Adib, R., Griffin, P., Ahamed, S.I. and Adibuzzaman, M., 2020, September. A Causally Formulated Hazard Ratio Estimation through Backdoor Adjustment on Structural Causal Model. In Machine Learning for Healthcare Conference (pp. 376-396). PMLR.
- Lerret, S.M., White-Traut, R., Medoff-Cooper, B., Simpson, P., Adib, R., Ahamed, S.I. and Schiffman, R., 2020. Pilot study protocol of a mHealth self-management intervention for family members of pediatric transplant recipients. Research in nursing & health, 43(2), pp.145-154.
- Johnson, N.L., Lerret, S., Klingbeil, C.G., Polfuss, M., Gibson, C., Gralton, K., Garnier-Villarreal, M., Ahamed, S.I., Adib, R., Unteutsch, R. and Pawela, L., 2020. Engaging parents in education for discharge (ePED): Evaluating the reach, adoption & implementation of an innovative discharge teaching method. Journal of Pediatric Nursing, 54, pp.42-49.
- Lerret, S.M., Johnson, N.L., Polfuss, M., Weiss, M., Gralton, K., Klingbeil, C.G., Gibson, C., Garnier-Villarreal, M., Ahamed, S.I., Adib, R. and Unteutsch, R., 2020. Using the engaging parents in education for discharge (ePED) iPad application to improve parent discharge experience. Journal of pediatric nursing, 52, pp.41-48.
- Adib, R., Aldawod, E., Lang, N., Lasswell, N. and Guha, S., 2019, July. Analyzing Happiness: Investigation on Happy Moments using a Bag-of-Words Approach and Related Ethical Discussions. In 2019 IEEE 43rd Annual Computer Software and Applications Conference (COMPSAC) (Vol. 1, pp. 653-662). IEEE.
- Roushan, T., Adib, R., Johnson, N., George, O., Hossain, M.F., Franco, Z., Hooyer, K. and Ahamed, S.I., 2019, July. Towards predicting risky behavior among veterans with PTSD by analyzing gesture patterns. In 2019 IEEE 43rd Annual Computer Software and Applications Conference (COMPSAC) (Vol. 1, pp. 690-695). IEEE.
- Hasan, M.K., Haque, M.M., Adib, R., Tumpa, J.F., Begum, A., Love, R.R., Kim, Y.L. and Sheikh, I.A., 2018. SmartHeLP: Smartphone-based hemoglobin level prediction using an artificial neural network. In AMIA Annual Symposium Proceedings (Vol. 2018, p. 535). American Medical Informatics Association.
- Ahsan, G.M.T., Tumpa, J.F., Adib, R., Ahamed, S.I., Petereit, D., Burhansstipanov, L., Krebs, L.U. and Dignan, M., 2018, July. A culturally tailored intervention system for cancer survivors to motivate physical activity. In 2018 IEEE 42nd Annual Computer Software and Applications Conference (COMPSAC) (Vol. 1, pp. 875-880). IEEE.

Selected Posters

- 'Community-based Retinal Screening with Multilingual Software Support to Overcome Language Barriers of Minority Communities', 2020 Conference Companion Publication on Computer Supported Cooperative Work and Social Computing (CSCW).
- 'mTEH: A Decision Support System for Teleophthalmology to Improve Eye Health of Wisconsin Population in Community Settings', 2019 4th IEEE/ACM Conference on Connected Health (CHASE'19), Washington, D.C.
- 'mHealth family self-management intervention for parents of transplanted children: Preliminary results"', 2019 14th International Family Nursing Association Annual Meeting, Washington, D.C.
- 'Outcomes of Use of Antipsychotic for Delirium in the ICU: A Big Data Approach', 2019 American Thoracic Society International Conference, Dallas, TX.
- 'E-BAP: A scalable and flexible web-based software system to support self-management for behavior changes', 2019 IEEE International Conference on Biomedical and Health Informatics (BHI'19), Chicago, IL.
- 'mHealth family self-management intervention for parents of transplanted children: Preliminary results', 2018 NIH K Scholars Workshop, Washington, D.C.
- 'Getting Started: mHealth family self-management intervention for parents of transplanted children', 2018 Studies of Pediatric Liver Transplantation Annual Meeting. Atlanta, GA.

Services

- Program committee member for **UAI 2021** and **COMPSAC 2021**
- Peer reviewer for **AISTATS 2022**, **AAAI 2021 Workshop: Trustworthy AI for Healthcare**, **ICLR 2021 Workshop: Machine Learning for Preventing and Combating Pandemics**, and **AMIA 2020**
- Student volunteer at **NeurIPS 2020**
- Invited talk on **Introduction to Causal Inference** for the course *Machine Learning Principles*, *Spring 2021* at Marquette University
- **Lab manager** for Ubicomp Lab, Marquette University from January 2019

Awards

- **Computer Science Summer Research Fellowship** (CSSRF) for Summer 2021 at Marquette University
- Second position holder at the **3rd Bangladesh Astro-Olympiad 2008**
- **Education Board Scholarship** *(Talent Pool)* for Secondary School Certificate (2007) and Higher Secondary Certificate (2009) Examination

Co-curricular

Film-making
General Secretary, BUET Film Society, Oct 2014 - May 2015

Music
Performed in multiple music shows, 3rd position in Inter Cadet College Literary and Music Meet, 2008

Basketball
Part of Champion team in Inter Hall Basketball Competition, BUET, Runner-up, 2014, Champion, 2015

References

Dr. Sheikh Iqbal Ahamed

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Professor and Chair,
Dept. of Computer Science,
Marquette University
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Dr. Mohammad Adibuzzaman

Mentor & Collaborator,
Co-Director, Informatics, Oregon Clinical and
Translational Research Institute
adibuzza@ohsu.edu