Mashfiqui Rabbi

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Computer Science
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Google Scholar:	bit.ly/MashGScholar
LinkedIn:	bit.ly/MashLinkedIn

Research Interest

General	Mobile health, Mobile computing, Machine learning, Behavior change, Human-computer Interaction
Specific	Just-in-time adaptive interventions (JITAIs), Personalization, Activity recognition, Reinforcement learning, User-centered design, Causal inference

Work history

2025-now	**Research Assistant Professor** at Computer Science, *University of Illinois, Urbana-Champaign*
2022-2025	**Senior Prinicipal Research Scientist** at Optum AI, *UnitedHealthGroup* <u>Manager</u>: Tanzeem Choudhury, Sankalita Saha
2020-2022	**Applied Research Scientist** at Health AI, *Apple Inc.* <u>Manager</u>: Emily Fox, Nicholas Foti
2017-2019	**Post-doctoral fellow** at Statistics Department, *Harvard University* <u>Advisor</u>: Susan Murphy
2016-2017	**Post-doctoral fellow** at Statistics Department, *University of Michigan, Ann Arbor* <u>Advisors</u>: Susan Murphy, Ambuj Tewari, Predrag Klasnja
2011-2016	**Research Assistant** in Department of Information Science at *Cornell University*
2014	**Summer Intern** at *Intel Labs* <u>Advisors</u>: Lama Nachman, Hong Lu
2013	**Teaching Assistant** in Department of Information Science at *Cornell University*
2012	**Summer Intern** at *AT&T Labs Research* <u>Advisors</u>: Emiliano Miluzzo, Suhrid Balakrishnan
2009-2011	**Research Assistant** in Department of Computer Science, *Dartmouth College* <u>Advisors</u>: Tanzeem Choudhury, Andrew Campbell
2010	**Teaching Assistant** in Department of Computer Science at *Dartmouth College*
2008-2009	**Quantitative Software Developer** in *Stochastic Logic Ltd., Dhaka, Bangladesh* <u>Advisor</u>: Arif Dowla, Ph.D. in Mathematics, UCSD

Education

2011-2016	**Ph.D.** in Information Science, *Cornell University* <u>Committee</u>: Tanzeem Choudhury (chair), Deborah Estrin, Dan Cosley

	Awarded Masters degree on October 2014
	Graduated April 2016
2009-2011	**Ph.D. Student** in Computer Science, *Dartmouth College*
	<u>Advisor</u>: Tanzeem Choudhury
	Transferred to Cornell University with advisor and continued PhD
2003-2007	**B.Sc.** in Computer Science and Engineering, *Bangladesh Uni. of Eng. and Tech.*
	<u>CGPA</u>: 3.74 out of 4.00, <u>Major</u>: 3.81
	<u>Thesis Advisor</u>: Saidur Rahman

Awards and grants

- 2025 Jump ARCHES grant on leveraging AI for shared medical appointments ($100k)
- 2022 10-year impact award at Ubicomp for the StressSense paper
- In iOS17, Apple launched a planning feature in Fitness+ app that used my Sub-goals app research
- Three NIH grants are using my SARA app research (K08CA241335, P50DA054039, R01NR020781)
- Principal Investigator of a pilot grant from NIDA/Methodology Center at Penn State, 2019 ($20k)
- Pilot grant from Michigan Institute for Clinical & Health Research for SARA app, 2018 ($100k)
- Co-PI of a pilot grant from Translational Research Inst. for Pain in Later Life, 2015 ($10k)
- Part of the winning team of $100K Heritage Open mHealth Challenge, 2013
- Most helpful summer intern (among 60 student-interns) at AT&T Labs Research, 2012
- Dean's list for the year 2004 at Bangladesh Uni. of Engr. & Tech.

Publications

Publications have been cited 3825 times.

Peer reviewed Journals, Conference papers, and Book chapters

2025	
	Harish Haresamudram, Apoorva Beedu, Mohammod Mashfiqui Rabbi Shuvo, Sankalita Saha, Irfan Essa, and Thomas Ploetz. Limitations in employing natural language supervision for sensor-based human activity recognition–and ways to overcome them. *To appear in Proceedings of Thirty-Ninth AAAI Conference on Artificial Intelligence (AAAI-25)*, 2025
2022	
	Tianchen Qian, Ashley E Walton, Linda M Collins, Predrag Klasnja, Stephanie T Lanza, Inbal Nahum-Shani, Mohammod Mashfiqui Rabbi Shuvo, Michael A Russell, Maureen A Walton, Hyesun Yoo, et al. The microrandomized trial for developing digital interventions: Experimental design and data analysis considerations. *Psychological methods*, 2022
2021	
	Lara N Coughlin, Inbal Nahum-Shani, Meredith L Philyaw-Kotov, Erin E Bonar, Mashfiqui Rabbi, Predrag Klasnja, Susan Murphy, and Maureen A Walton. Developing an adaptive mobile intervention to address risky substance use among adolescents and emerging adults: Usability study. *JMIR mHealth and uHealth*, 9(1):e24424, 2021

2020

Shuang Li, Alexandra M Psihogios, Elise R McKelvey, Annisa Ahmed, Mashfiqui Rabbi, and Susan Murphy. Micro-randomized trials for promoting engagement in mobile health data collection: Adolescent/young adult oral chemotherapy adherence as an example. *Current Opinion in Systems Biology*, 2020

2019

Mashfiqui Rabbi, Katherine Li, H Yanna Yan, Kelly Hall, Predrag Klasnja, and Susan Murphy. Revibe: A context-assisted evening recall approach to improve self-report adherence. *Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies*, 3(4):1–27, 2019

Marianne Menictas, Mashfiqui Rabbi, Predrag Klasnja, and Susan Murphy. Artificial intelligence decision-making in mobile health. *The Biochemist*, 41(5):20–24, 2019

Mashfiqui Rabbi, Predrag Klasnja, Tanzeem Choudhury, Ambuj Tewari, and Susan Murphy. Optimizing mhealth interventions with a bandit. In *Mobile sensing and Psychoinformatics (In press)*. Springer, 2019

2018

Mashfiqui Rabbi, Min SH Aung, Geri Gay, M Cary Reid, and Tanzeem Choudhury. Feasibility and acceptability of mobile phone–based auto-personalized physical activity recommendations for chronic pain self-management: Pilot study on adults. *J Med Internet Res*, 20(10):e10147, Oct 2018

Mashfiqui Rabbi, Meredith Philyaw Kotov, Rebecca Cunningham, Erin E Bonar, Inbal Nahum-Shani, Predrag Klasnja, Maureen Walton, and Susan Murphy. Toward increasing engagement in substance use data collection: Development of the substance abuse research assistant app and protocol for a microrandomized trial using adolescents and emerging adults. *JMIR Res Protoc*, 7(7):e166, Jul 2018

2017

Mashfiqui Rabbi, Min Hane Aung, and Tanzeem Choudhury. Towards health recommendation systems: an approach for providing automated personalized health feedback from mobile data. In *Mobile Health*, pages 519–542. Springer, 2017

Eun Kyoung Choe, Saeed Abdullah, Mashfiqui Rabbi, Edison Thomaz, Daniel A Epstein, Felicia Cordeiro, Matthew Kay, Gregory D Abowd, Tanzeem Choudhury, James Fogarty, et al. Semi-automated tracking: A balanced approach for self-monitoring applications. *IEEE Pervasive Computing*, 16(1):74–84, 2017

2016

Min Aung, Faisal Alquaddoomi, Cheng-Kang Hsieh, Mashfiqui Rabbi, Longqi Yang, JP Pollak, Deborah Estrin, and Tanzeem Choudhury. Leveraging multi-modal sensing for mobile health: a case review in chronic pain. 2016

2015

Mashfiqui Rabbi, Min Hane Aung, Mi Zhang, and Tanzeem Choudhury. Mybehavior: Automatic personalized health feedback from user behavior and preference using smartphones. In *Ubicomp*, 2015

Mashfiqui Rabbi, Jean Costa, Fabian Okeke, Max Schachere, Mi Zhang, and Tanzeem Choudhury. An intelligent crowd-worker selection approach for reliable content labeling of food images. In *Wireless Health*, 2015

Mashfiqui Rabbi, Angela Pfammatter, Mi Zhang, Bonnie Spring, and Tanzeem Choudhury. Automated personalized feedback for physical activity and dietary behavior change with mobile phones: A randomized controlled trial on adults. *JMIR mHealth and uHealth*, 3(2):e42, May 2015

2014

Phil Adams, Mashfiqui Rabbi, Tauhidur Rahmant, Mark Matthews, Amy Voida, Geri Gay, Tanzeem Choudhury, and Stephen Voida. Towards personal stress informatics: Comparing minimally invasive techniques for measuring daily stress in the wild. In *Pervasive Health*, 2014

Nicholas D Lane, Mu Lin, Mashfiqui Rabbi, Xiaochao Yang, Hong Lu, Giuseppe Cardone, Shahid Ali, Afsaneh Doryab, Ethan Berke, Andrew T Campbell, et al. Bewell: Sensing sleep, physical activities and social interactions to promote wellbeing. *Mobile Networks and Applications*, pages 1–15, 2014

2012

Hong Lu, Mashfiqui Rabbi, Denise Frauendorfer, Marianne Schmid Mast, Gokul T Chittaranjan, Andrew T Campbell, Daniel Gatica-Perez, and Tanzeem Choudhury. Stresssense: Detecting stress in unconstrained acoustic environments using smartphones. In *Proceedings of the 2012 ACM Conference on Ubiquitous Computing*, pages 351–360. ACM, 2012

Mu Lin, Nicholas D Lane, Mashfiqui Rabbi, Xiaochao Yang, Hong Lu, Giuseppe Cardone, Shahid Ali, Afsaneh Doryab, Ethan Berke, Andrew T Campbell, et al. Bewell+: multi-dimensional wellbeing monitoring with community-guided user feedback and energy optimization. In *Proceedings of the conference on Wireless Health*, page 10. ACM, 2012

2011

Mashfiqui Rabbi, Shahid Ali, Tanzeem Choudhury, and Ethan Berke. Passive and in-situ assessment of mental and physical well-being using mobile sensors. In *Proc. 13th ACM IntÕl Conf. Ubiquitous Computing*, pages 385–394, 2011

Nicholas D Lane, Mashfiqui Rabbi, Mu Lin, Xiaochao Yang, Hong Lu, Shahid Ali, Afsaneh Doryab, Ethan Berke, Tanzeem Choudhury, and Andrew T Campbell. Bewell: A smartphone application to monitor, model and promote wellbeing. In *5th International Conference on Pervasive Computing Technologies for Healthcare (PervasiveHealth2011)*, 2011

Ethan M Berke, Tanzeem Choudhury, Shahid Ali, and Mashfiqui Rabbi. Objective measurement of sociability and activity: mobile sensing in the community. *The Annals of Family Medicine*, 9(4):344–350, 2011

2010

Andrew Campbell, Tanzeem Choudhury, Shaohan Hu, Hong Lu, Matthew K Mukerjee, Mashfiqui Rabbi, and Rajeev DS Raizada. Neurophone: brain-mobile phone interface using a wireless eeg headset. In *Proceedings of the second ACM SIGCOMM workshop on Networking, systems, and applications on mobile handhelds*, pages 3–8. ACM, 2010

Md Jawaherul Alam, Mashfiqui Rabbi, and Md Saidur Rahman. Upright drawings of planar graphs on three layers. *Journal of Applied Mathematics & Informatics*, 28(56):1347–1358, 2010

Muhammad Jawaherul Alam, Md Abul Hassan Samee, Mashfiqui Rabbi, and Md Saidur Rahman. Minimum-layer upward drawings of trees. *J. Graph Algorithms Appl.*, 14(2):245–267, 2010

2008

Md Jawaherul Alam, Md Abul Hassan Samee, Md Mashfiqui Rabbi, and Md Saidur Rahman. Upward drawings of trees on the minimum number of layers. In *WALCOM: Algorithms and Computation*, pages 88–99. Springer, 2008

Lightly peer reviewed Abstracts, Posters, and Workshop papers

2017

Mashfiqui Rabbi, Meredith Philyaw-Kotov, Jinseok Lee, Anthony Mansour, Laura Dent, Xiaolei Wang, Rebecca Cunningham, Erin Bonar, Inbal Nahum-Shani, Predrag Klasnja, et al. Sara: a mobile app to engage users in health data collection. In *Proceedings of the 2017 ACM International Joint Conference on Pervasive and Ubiquitous Computing and Proceedings of the 2017 ACM International Symposium on Wearable Computers*, pages 781–789. ACM, 2017

2015

Mashfiqui Rabbi, Thiago Caetano, Jean Costa, Saeed Abdullah, Mi Zhang, and Tanzeem Choudhury. Saint: A scalable sensing and inference toolkit (poster). In *Hotmobile*, 2015

2014

Mashfiqui Rabbi and Syed Ishtique Ahmed. Sensing stress network for social coping. Accepted for CSCW Interactive Poster Session, 2014

2013

Stephen Voida, Mark Matthews, Saeed Abdullah, Mengxi Chrissie Xi, Matthew Green, Won Jun Jang, Donald Hu, John Weinrich, Prashama Patil, Mashfiqui Rabbi, et al. Moodrhythm: tracking and supporting daily rhythms. In *Proceedings of the 2013 ACM conference on Pervasive and ubiquitous computing adjunct publication*, pages 67–70. ACM, 2013

Stephen Voida, Tanzeem Choudhury, Geri Gay, Mark Matthews, Phil Adams, Mashfiqui Rabbi, JP Pollak, Mengxi (Chrissie) Chi, Matthew Green, Hong Lu, Nicholas D. Lane, Mu Lin, and Andrew T. Campbell. Personal informatics can be stressful: Collecting, reflecting, and embedding stress data in personal informatics. In *CHI 2013 workshop on Personal Informatics in the Wild: Hacking Habits for Health & Happiness, Paris, France,*, April 2728, 2013

Mashfiqui Rabbi, Chien wen Yuan, and Kirsikka Kaipaien. An exploratory study to identify opportune moments in everyday life to promote healthy eating. Poster in ISBNPA, 2013

Invited Talks

- <u>Computational Interventions for Behavior Change</u>: Link Lab, University of Virginia, 2023
- <u>Computational Interventions for Behavior Change</u>: HCII seminar at CMU, 2019
- <u>SARA: Substance Abuse Research Assistant</u> mHealth Research Affinity Group at Children's Hospital of Philadelphia, 2019
- <u>SARA: Substance Abuse Research Assistant</u> HIV working group. at Harvard Biostatistics Dept, 2019
- <u>Computational Interventions for Behavior Change</u>: School of Biomedical Informatics at University of Texas Health Science Center, 2019
- <u>Computational Interventions for Behavior Change</u>: Turi at Apple Inc., Seattle, WA , 2019
- <u>Computational Interventions for Behavior Change</u>: April, 2019: CS+X colloquium at Northwestern University, 2019
- <u>SARA: Substance Abuse Research Assistant</u> at Prevention Center of *Penn State University*, 2018

- <u>SARA: Substance Abuse Research Assistant</u> at Methodology Center of *Society of Clinical Trials, Portland, Oregon*, 2018
- <u>SARA: Substance Abuse Research Assistant</u> at Methodology Center of *Penn State University*, 2017
- <u>SARA: Substance Abuse Research Assistant</u> at Statistics PhD student seminar at *Harvard University*, 2017
- <u>MyBehavior</u> at Methodology Center of *Penn State University*, 2017
- <u>MyBehavior</u> at HCI Seminar of *University of Rochester*, 2013
- <u>MyBehavior</u> at Information Science Brown-bag Series at *Cornell University*, 2013
- <u>Mobile Phone Sensing</u> at the Computer Science Seminar at *Bangladesh Uni. of Engr. & Tech.*, 2012
- <u>Passive Assessment of Mental and Physical Well-being</u> at *Ubicomp*, 2011
- <u>Passive Assessment of Mental and Physical Well-being</u> at Information Science Breakfast Series in *Cornell University*, 2011

Selected Press Coverage

- Apple releases planning feature in Fitness+ app, 2023
- 10 year impact award at Ubicomp for StressSense work, 2022
- A Health-Tracking App You Might Actually Stick With, MIT Technology Review, 2015
- Cornell researchers use personalized algorithm in weight loss app, MobiHealth News, 2015
- This app helps you burn calories without radically changing your routine., Mashable, 2015
- Virtual Companion, AT&T Innovation Showcase "Connecting Your World", 2013
- Teaching old microphones new tricks, The Economist, 2013
- Smartphone that feels your strain, New Scientist, 2012
- Voice-Stress Software Is Put to the Test, PhysOrg and ACM Tech, 2012
- Monitoring Mental Health from Your Pocket, Cornell Chronicle, 2011
- Neural Phone is featured in The Cyborg in us all, the NYTimes Magazine, 2011
- An App That Reads Your Feelings Through Your Voice, Fast Co's Co.Exist piece, 2011
- Cellphone Apps to Track Our Health, EarthSky, 2011
- Mobile Phone Mind Control, Technology Review, 2010

Students advised

- Brian Lin, Undergraduate, Information Science, Cornell University, *Fall 2011, Spring 2012, Fall 2012*
- Jan Cardenas, Undergraduate, Information Science, Cornell University, *Fall 2012*

- Chantelle Farmer, Masters, Information Science, Cornell University, *Spring 2013*

- Thiago Caetano, Undergraduate visiting student from Universidade Estadual de Campinas at Cornell University, *Summer 2013*

- Max Schachere, High School student from Hawken School, Ohio, *Summer 2013, Summer 2014*

- Shankar Athinarayanan, Undergraduate, Computer Science, Cornell University, *Fall 2013, Spring 2014, Fall 2014, Spring 2015*

- Lily Gao, UX designer, Undergraduate, Information Science, Cornell University, *Fall 2014*

- Shreya Sitaraman, Undergraduate, Information Science, Cornell University, *Summer 2014*

- Jiaming Zhang, Undergraduate, School of Human Ecology, Cornell University, *Summer 2015, Fall 2015*

- Xian Zhang, Masters, Information Science, Cornell University, *Spring 2015, Summer 2015, Fall 2015, Spring 2016*

- Rohit Biswas, Undergraduate, Information Science, Cornell University, *Summer 2015, Fall 2015, Spring 2016*

- Minghao Li , Masters, Information Science, Cornell University, *Summer 2015, Fall 2015, Spring 2016*

- Zhe Lin, Masters, Information Science, Cornell University, *Summer 2015, Fall 2015, Spring 2016*

- Kelly Hall, Undergraduate, Statistics, University of Michigan, *Fall 2016*

- Bess Rothman, Undergraduate, Statistics, University of Michigan, *Summer 2017, Fall 2017*

- Katherine Li, Undergraduate, Statistics, University of Michigan, *Fall 2016, Spring 2017, Summer 2017, Fall 2017, Spring 2018*

- Bhanu Teja Gullapalli, PhD Candidate, University of California, San Diego, *Summer intern 2023*

Reference

- Tanzeem Choudhury, Professor at Department of Information Science, Cornell Tech

- Susan Murphy, Professor at Department of Statistics and Computer Science, Harvard University

- Andrew Campbell, Professor at Computer Science, Dartmouth College

- Guillermo Sapiro, Professor at Department of Computer Science, Duke University; Lead, Health AI, Apple

Last updated: August 25, 2025