

# Amna Batool

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School of Information, University of Michigan (UMSI)

Ann Arbor, MI, USA

## Research Interests

Human-Computer Interaction (HCI), Information and Communication Technologies for Development (ICTD), Social Media Privacy, Non-consensual Disclosure, Maternal and Child Health, South Asian Women.

## Education

### **Ph.D. in Information**

Sept. 2019 - Present

School of Information, University of Michigan (UMSI), Ann Arbor, MI

Advisors: Kentaro Toyama, Mustafa Naseem

### **Master's in computer science**

Sept. 2012 - Aug. 2014

Information Technology University (ITU), Punjab, Pakistan

Advisors: Samia Ibtisam (in-house), Kentaro Toyama(external)

### **Undergrad in Electrical Engineering**

Sept. 2006 - Aug. 2010

Government College University (GCU), Lahore, Pakistan

## Employment

### **Graduate Student Research Assistant and Instructor**

Sept. 2019 - Present

School of Information, University of Michigan (UMSI), Ann Arbor, MI

### **Teaching Fellow**

Sept. 2017 - Aug. 2019

Information Technology University (ITU), Punjab, Pakistan

### **Director**

Sept. 2017 - Aug. 2019

Innovation for Poverty Alleviation Lab (IPAL), Punjab, Pakistan

### **Technical and Research Lead on Funded Projects**

Sept. 2017 - Aug. 2019

Information Technology University (ITU), Punjab, Pakistan

Google Next Billion User Initiative,  
Department for International Development (DFID), and  
Gates and Melinda Foundation

**Research Assistant**  
Information Technology University (ITU), Punjab, Pakistan

Sept. 2014 - Aug. 2017

**Teaching Assistant**  
Information Technology University (ITU), Punjab, Pakistan

Sept. 2013 - Aug. 2014

## **Publications**

### *Conference Proceedings: Full Papers*

[p1] Jane Im, Sarita Schoenebeck, Marilyn Iriarte, Gabriel Grill, Daricia Wilkinson, **Amna Batool**, Rahaf Alharbi, Audrey N. Funwie, Tergel Gankhuu, Eric Gilbert, Mustafa Naseem. Beyond Borders: Women's Perspectives on Harm and Justice after Online Harassment. Under the major revision, CSCW 2021

[p2] **Amna Batool**, Kentaro Toyama, Tiffany Veinot, Beenish Fatima, and Mustafa Naseem. "Detecting Data Falsification by Front-line Development Workers: A Case Study of Vaccination in Pakistan." In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems, pp. 1-14. 2021.

[p3] Mustafa, Maryam, Kimia Tuz Zaman, Tallal Ahmad, **Amna Batool**, Masitah Ghazali, and Nova Ahmed. "Religion and Women's Intimate Health: Towards an Inclusive Approach to Healthcare." In Proceedings of the 2021 CHI Conference on Human Factors in Computing Systems, pp. 1-13. 2021.

[p4] Mustafa, Maryam, **Amna Batool**, Beenish Fatima, Fareeda Nawaz, Kentaro Toyama, and Agha Ali Raza. "Patriarchy, maternal health and spiritual healing: Designing maternal health interventions in Pakistan." In Proceedings of the 2020 CHI Conference on Human Factors in Computing Systems, pp. 1-13. 2020.

[p5] Sambasivan, Nithya, **Amna Batool**, Nova Ahmed, Tara Matthews, Kurt Thomas, Laura Sanely Gaytán-Lugo, David Nemer, Elie Bursztein, Elizabeth Churchill, and Sunny Consolvo. "" They Don't Leave Us Alone Anywhere We Go" Gender and Digital Abuse in South Asia." In proceedings of the 2019 CHI Conference on Human Factors in Computing Systems, pp. 1-14. 2019. **[Best Paper Award]**

[p6] Sambasivan, Nithya, Garen Checkley, **Amna Batool**, Nova Ahmed, David Nemer, Laura Sanely Gaytán-Lugo, Tara Matthews, Sunny Consolvo, and Elizabeth Churchill. "" Privacy is not for me, it's for those rich women": Performative Privacy Practices on Mobile Phones by Women in South Asia." In Fourteenth Symposium on Usable Privacy and Security ({SOUPS} 2018), pp. 127-142. 2018. **[Best Paper Award]**

[p7] **Batool, Amna**, Samia Razaq, Maham Javaid, Beenish Fatima, and Kentaro Toyama. "Maternal complications: Nuances in mobile interventions for maternal health in urban Pakistan." In Proceedings of the Ninth International Conference on Information and Communication Technologies and Development, pp. 1-12. 2017.

[p8] Razaq, Samia, **Amna Batool**, Umair Ali, Muhammad Salman Khalid, Umar Saif, and Mustafa Naseem. "Iterative Design of an Immunization Information System in Pakistan." In Proceedings of the 7th Annual Symposium on Computing for Development, pp. 1-10. 2016.

### ***Conference Proceedings: Notes (Short Papers)***

[n1] Gilani, Syed Taha Bilal, Ahmed Shahzad, Shahzaib Ahmad Malik, Rana Abdul Haseeb, Beenish Fatima, and **Amna Batool**. "Improving financial condition of small scale farmers through mobile based crop suggestion services." In Proceedings of the Tenth International Conference on Information and Communication Technologies and Development, pp. 1-5. 2019.

[n2] Idrees, Fahad, Junaid Qadir, Hamid Mehmood, Saeed Ul Hassan, and **Amna Batool**. "Urdu language based information dissemination system for low-literate farmers." In Proceedings of the Tenth International Conference on Information and Communication Technologies and Development, pp. 1-5. 2019.

[n3] Naveed, Khushbakht, Zofishan Hameed, Aqsa Khalid, Adeena Hamid, Beenish Fatima, and **Amna Batool**. "Exploratory study on organ donation and organ transplantation in Pakistan." In Proceedings of the Tenth International Conference on Information and Communication Technologies and Development, pp. 1-4. 2019.

[n4] **Batool, Amna**, Naveed Ahmed, Waseem Rasool, Umar Saif, and Mustafa Naseem. "Money matters: exploring opportunities in digital donation to mosques in Pakistan." In Proceedings of the Tenth International Conference on Information and Communication Technologies and Development, pp. 1-4. 2019.

[n5] Idrees, Fahad, **Amna Batool**, and Junaid Qadir. "Weather Forecast Information Dissemination Design For Low-Literate Farmers: An Exploratory Study." In Proceedings of the

Ninth International Conference on Information and Communication Technologies and Development, pp. 1-5. 2017.

[n6] Ahmad, Tallal, **Amna Batool**, M. Salman Khalid, and Samia Ibtasam. "Scrolling, Navigation, and Selection: How New Smartphone Users Discover It." In Proceedings of the Ninth International Conference on Information and Communication Technologies and Development, pp. 1-5. 2017.

[n7] Javaid, Maham, Beenish Fatima, and **Amna Batool**. "Bridging the knowledge gaps in lady health visitors through video based learning tool." In Proceedings of the Ninth International Conference on Information and Communication Technologies and Development, pp. 1-4. 2017.

[n8] **Batool, Amna**, Ayesha Asghar, Tayeba Tariq, Mohsin Badar, Iqra Shahzad, Umair Anwar, and Mustafa Naseem. "Design Methods to Reduce Technology Fear and Solicit Feedback from Lady Health Workers (LHWs) in Pakistan." In Proceedings of the 7th Annual Symposium on Computing for Development, pp. 1-4. 2016.

[n9] **Batool, Amna**, Umair Ali, Samia Razaq, and Mustafa Naseem. "Child Immunization Health Card Redesign: an Iterative, User-Centered Approach." In Proceedings of the Eighth International Conference on Information and Communication Technologies and Development, pp. 1-4. 2016.

[n10] **Batool, Amna**, Samia Razaq, and Kentaro Toyama. "An Investigation into ICT-Addressable Causes of Maternal Mortality in Pakistan." In Proceedings of the 2015 Annual Symposium on Computing for Development, pp. 65-66. 2015.

### ***Workshop Papers***

[w1] Sarita Schoenebeck, Jane Im, **Amna Batool**, Daricia Wilkinson, Audrey Funwie, Rahaf Alharbi, Marilyn Iriarte, Gabriel Grill, Eric Gilbert, Mustafa Naseem. Repairing Online Harms: Assessing Punitive and Reparative Justice Approaches. First Annual Conference of The Platform Governance Research Network. March 2021.

### ***Articles***

[a1] Mustafa, Maryam, **Amna Batool**, and Agha Ali Raza. "Designing ICT interventions for women in Pakistan." Communications of the ACM 62, no. 11 (2019): 46-47.

[a2] Sambasivan, Nithya, Nova Ahmed, **Amna Batool**, Elie Bursztein, Elizabeth Churchill, Laura Sanely Gaytan-Lugo, Tara Matthews, David Nemar, Kurt Thomas, and Sunny Consolvo. "Toward Gender-Equitable Privacy and Security in South Asia." IEEE Security & Privacy 17, no. 4 (2019): 71-77.

[a3] Sambasivan, Nithya, Garen Checkley, Nova Ahmed, and **Amna Batool**. "Gender equity in technologies: considerations for design in the global south." *Interactions* 25, no. 1 (2017): 58-61.

### ***Papers under Submission/in Progress***

[w1] **Batool, Amna**. Non-consensual Disclosure of Women's Sensitive Information on Social Media in South Asian Context. Ph.D. Consortium, CSCW 2022.

[w2] **Batool, Amna**, Arman Razeem, Kentaro Toyama, Mustafa Naseem. "Improving Supervisors' Motivation through Mobile Application"

[w3] **Batool, Amna**, Sarita Schoenebeck, Kentaro Toyama, Mustafa Naseem. "Gendered Definition of Online Harassment"

[w4] **Batool, Amna**, Arman Razeem, Kentaro Toyama, Mustafa Naseem. "Tradeoffs while Designing Systems in Governance."

### **Awards, Fellowships & Scholarships**

**Fulbright Scholarship (declined)** 2019  
Secured Fulbright funding for PhD 2019 cohort

**Best Paper Award** 2018  
ACM Conference on Human Factors in Computing Systems (CHI 2018)

**Best Paper Award** 2018  
Fourteenth Symposium on Usable Privacy and Security (SOUPS, 2018)

**STEM Role Model Nominee** 2018  
Nominated as a role model for women in STEM in Pakistan

**Australian Award Fellowship** 2017  
Technology Ecosystem Workshop in Melbourne, Australia

**United Nation Peace Technology Initiative Fellowship** 2017  
UN University, Macau

**IDDS Fellowship** 2015  
One month fellowship on health design thinking in Chennai, India

**Gold Medal** 2015  
Master's in computer science, ITU

**Gold Medal and Roll of Honor** 2011  
BS Electrical Engineering, GCU

## **Research Experience**

**Graduate Student Research Assistant (GSRA)** Sept. 2019 - Present  
School of Information, University of Michigan (UMSI), Ann Arbor, MI

- Working on designing and piloting a supervisory application for vaccination field supervisors to help them improve immunization coverage through supportive supervision in Pakistan (G&M-funded) [w2, w4].
- Worked on identifying supervisors' strategies to identify intentional data falsification done by the frontline health workforce (G&M-funded) [p2].
- Working on a proposal to study non-consensual disclosure of women's sensitive information on social media in South Asia [w1].
- Working on a study with social media users in Pakistan to define online harassment in South Asian communities (UMSI-funded) [w3].

**Research and Technical Lead** Sept. 2017 - August 2019  
Information Technology University (ITU), Punjab, Pakistan

- Worked on understanding culture and religion-related sexual health concerns of women and their family members (NAKFI-funded) [p3, p4]
- Worked on understanding gender equity in technology regarding device and social media privacy concerns of women from South Asia (Google-funded) [p5, p6, a2, a3].

**Research Assistant** Sept. 2013- August 2016  
Information Technology University (ITU), Punjab, Pakistan

- Worked on designing an NFC enabled mobile application for front line health workers to digitize child-level immunization records in order to improve immunization coverage in Punjab, Pakistan (DFID-funded) [p8, n9]
- Worked with frontline health workers to understand their technology concern and to designing technologies to improve their knowledge [n7, n8]

**Master's Thesis** Sept. 2013- August 2015

Information Technology University (ITU), Punjab, Pakistan

- Designed and implemented a mobile voice and text-based information system for expecting mothers at a government hospital in Lahore, Pakistan [p7, n10].

## **Teaching Experience**

**Graduate Student Instructor (GSI)**

Sept. 2020 - April 2021

School of Information, University of Michigan (UMSI), Ann Arbor, MI

- *Course 1: SI 422: Needs Assessment and Usability Evaluation:* A 3-credit undergrad course that provides a hands-on experience to learn different research methods relevant to conduct user need assessment and usability studies on existing technology related products and services.

**Teaching Fellow (Lecturer)**

Sept. 2017- August 2019

Information Technology University (ITU), Punjab, Pakistan

- *Course 1: Information and Communication Technologies for Development (ICTD):* A 3-credit graduate course that provides hands-on experience to learn design cycle while design technological solutions to local problems.
- *Course 2: Introduction to Computer Science:* A 3-credit undergrad course that introduce different streams of computer science to freshmen.

**Teaching Assistant (TA)**

Sept. 2014 - August 2016

Information Technology University (ITU), Punjab, Pakistan

- *Course 1: Data Structures:* A 3-credit undergrad course that provides hands-on experience to explore different types of data Structures along with their needs and complexities.
- *Course 2: Design and Development Lab:* A 3-credit graduate course that provides hands-on experience to learn design cycle while design technological solutions to local problems.

## **Invited Talks**

**Guest Speaker: Gender Equity in Technologies**

Sept. 2021

Cornell GSGIC (Grads for Gender Inclusion in Computing)

**Guest Speaker: Social Media Privacy Concerns of South Asian Women** March 2021  
School of Information, University of Michigan (UMSI), Ann Arbor, MI (Course SI 430)

*[Presented all my published work in corresponding conferences and fellowships]*

## **Academic Mentoring**

Supervised masters' thesis [n2, n5]	Sept. 2016 - Apr. 2018
Supervised masters' thesis [n4]	Sept. 2017 - Apr. 2018
Mentored masters' thesis [n6]	Sept. 2016 - Apr. 2017
Supervised final year project of an undergraduate group [n1]	Sept. 2017 - Apr. 2018
Supervised final year project of an undergraduate group [n3]	Sept. 2017 - Apr. 2018

*[Beside publications supervised 8 undergrad final year projects and 6 masters' thesis during my stay in ITU as lecturer from Sept. 2017 - August 2019]*

## **Services**

Reviewed ACM CHI full paper	2018
Served as a Local Chair for International conference ICTD held in Pakistan.	2017
Served twice as a Design Facilitator for Design workshops in Pakistan	2016
Served as a regional worker for Akhuwat Cloth Bank, Pakistan	2015 - 2018

## **Skills**

**Research Methods:** Interviews, Fous Group Discussions, User study, Usability testing, Survey, Heuristic Evaluation, Thematic analysis, Prototyping, Randomize control trials, Experiments.

**Technical:** Python language, Android development, SMS based applications, Free switch for call-based systems, Wireframing, Technical Deployments

## **Coursework**

**Ph.D. courses:** Qualitative and Quantitative Research Methods, Research methods for Special Populations, Feminist Theories, Reproductive Health, Mobile Health Interventions, Doctoral Foundations Seminar, Human-Computer Interaction, Qualitative Research Methods, Intro to Statistics

**Computer Science (grad) & Electrical Engineering (undergrad) courses:** Programming Language, Data Structure, Algorithms, Computer Architecture, Calculus Computer Programming, Introduction to Linear Algebra, Operating Systems, Data Structures, Databases, Embedded Systems, Theory of Computation, Telecommunication, Power Electronics, Digital Logic Design, Signal and Systems, Ethics.

Last updated: September 06, 2021