Debaleena Chattopadhyay

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Research Interest

Human-computer interaction; focusing on designing, prototyping, and evaluating intuitive user experiences, particularly investigating socio-technical systems.

Employment

Assistant Professor October, 2016–
Department of Computer Science, The University of Illinois at Chicago, Illinois, USA

Research Intern Summer, 2015
Human Experience and Design (HxD) group, Microsoft Research, Cambridge, UK

Instructor Spring, 2015
School of Informatics and Computing, Indiana University, Indianapolis, USA

Research Intern Summer, 2008
Innovation Lab, Tata Consultancy Service Ltd., Kolkata, India

Education

Ph.D., Human-Computer Interaction 2016
Department of Human-Centered Computing, School of Informatics and Computing
Indiana University, Indianapolis, Indiana, USA
Doctoral Dissertation: Understanding interaction mechanics in touchless target selection.

M.S., Computer Science 2011
Computer Science Department
Stony Brook University, Stony Brook, New York, USA
Master's Thesis: Multimodal tagging of human motion using skeletal tracking with Kinect.

B.S., Computer Science & Engineering 2009
Department of Computer Science and Engineering
West Bengal University of Technology, Kolkata, West Bengal, India

Research

Refereed Journal Articles

[J.7] **Chattopadhyay, D.**, Verma, N., Duke, J. D., & Bolchini, D. (2018). Design and Evaluation of Trust–Eliciting Cues in Drug–Drug Interaction Alerts. ***Interacting with Computers***, *30*(2), 85–98.

[J.6] **Chattopadhyay, D.**, Salvadori, F., O'Hara, K, & Rintel, S. (2017). Beyond presentation: Shared slideware control as a resource for collocated collaboration. ***Human-Computer Interaction***, 33:5-6, 455–498.

[J.5] MacDorman, K. F., & **Chattopadhyay, D.** (2017). Categorization-based stranger avoidance does not explain the uncanny valley effect. ***Cognition***, *161*, 132–135.

[J.4] **Chattopadhyay, D.** & MacDorman, K. F. (2016). Familiar faces rendered strange: Why inconsistent realism drives characters into the uncanny valley. ***Journal of Vision***, *16*(11), 1–25.

[J.3] MacDorman, K. F., & **Chattopadhyay, D.** (2016). Reducing consistency in human realism increases the uncanny valley effect; increasing category uncertainty does not. ***Cognition***, *146*, 190–205.

[J.2] **Chattopadhyay, D.**, Rohani Ghahari, R., Duke, J. D., & Bolchini, D. (2015). Understanding advice sharing among physicians: towards trust-based clinical alerts. ***Interacting with Computers***, *28*(4), 532–551.

[J.1] **Chattopadhyay, D.**, & Bolchini, D. (2015). Motor-intuitive interactions based on image schemas: aligning touchless interaction primitives with human sensorimotor abilities. ***Interacting with Computers***, *27*(3), 327–343.

Peer-reviewed Conference Papers

[C.5] **Chattopadhyay, D.**, O'Hara, K., Rintel, S., & Rädle, R. (2016) Office Social: Presentation interactivity for nearby devices. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ***CHI***, 2487–2491, ACM. (acceptance rate: 23.4%)

[C.4] **Chattopadhyay, D.**, & Bolchini, D. (2014). Touchless Circular Menus: Toward an intuitive UI for touchless interactions with large displays. In Proceedings of the International Working Conference on Advanced Visual Interfaces, ***AVI***, 33–40, ACM. (Acceptance rate: 29%)

[C.3] Yun, K., Carrillo, J. H., **Chattopadhyay, D.**, Berg, T. L., & Samaras, D. (2012). Two-person interaction detection using body-pose features and multiple instance learning. In Proceedings of Computer Vision and Pattern Recognition Workshops, ***CVPR***, 28–35, IEEE.

[C.2] Berg, T. L., **Chattopadhyay, D.**, Schedel, M., & Vallier, T. (2012). Interactive music: Human motion initiated music generation using skeletal tracking by Kinect. In Proceedings of Society for Electro-Acoustic Music in the United States, ***SEAMUS***, Wisconsin, USA.

[C.1] Bhowmick, B., & **Chattopadhyay, D.** (2009). Shot boundary detection using texture feature based on co-occurrence matrices. In Proceedings of International Conference on Multimedia, Signal Processing and Communication Technologies, ***IMPACT***, 165–168, IEEE.

Extended Abstracts (lightly peer-reviewed)

[E.11] Habibi, P., & **Chattopadhyay, D.** (2019). A Left-Hand Advantage: Motor Asymmetry in Touchless Input. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. ***CHI***, ACM. just accepted.

[E.10] Ma, T., Sharifi, H., & **Chattopadhyay, D.** (2019). Virtual Humans in Health-Related Interventions: A Meta-Analysis. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. ***CHI***, ACM. just accepted.

[E.9] Naik, H., & **Chattopadhyay, D.** (2019). An Extensible Data Collection and Annotation Tool for Co-located Group Interactions. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems. ***CHI***, ACM. just accepted.

[E.8] **Chattopadhyay, D.** (2018). Toward a Bayesian Approach for Self-Tracking Personal Pollution Exposures. ***UbiComp*** Adjunct, 1166–1171, ACM.

[E.7] Sakhnini, N., Yu, J., and **Chattopadhyay, D.** (2018). myCityMeter: Helping Older Adults Manage the Environmental Risk Factors for Cognitive Impairment. ***UbiComp*** Adjunct, 235–238, ACM. ***Best Poster Honorable Mention, top 1.5%***

[E.6] **Chattopadhyay, D.**, Duke, J. D., & Bolchini, D. (2016). Endorsement, prior action, and language: modeling trusted advice in computerized clinical alerts. In Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, ***CHI***, 2027–2033, ACM. ***Best Paper Honorable Mention, top 5%***

[E.5] **Chattopadhyay, D.** (2015). Toward motor–intuitive interaction primitives for touchless interfaces. In Proceedings of the Tenth International Conference on Interactive Tabletops and Surfaces, ***ITS***, 445–450, ACM. *(Doctoral Consortium)*

[E.4] **Chattopadhyay, D.** (2015). Exploring perceptual and motor Gestalt in touchless interactions with distant displays. In Proceedings of the Ninth International Conference on Tangible, Embedded and Embodied Interaction, ***TEI***, 433–436, ACM. *(Doctoral Consortium)*

[E.3] **Chattopadhyay, D.**, Achmiz, S., Saxena, S., Bansal, M., Bolchini, D., & Voida, S. (2014). Holes, pits, and valleys: guiding large-display touchless interactions with data-morphed topographies. Ext. Abstracts, ***UbiComp***, 19–22, ACM.

[E.2] **Chattopadhyay, D.**, Pan, W., & Bolchini, D. (2013). A 'Stopper' metaphor for persistent visual feedback in touchless interactions with wall-sized displays. International Symposium on Pervasive Displays, ***PerDis***, Mountain View, California, USA.

[E.1] **Chattopadhyay, D.**, & Bolchini, D. (2013). Laid-back, touchless collaboration around wall-size displays: visual feedback and affordances. Position paper at the International Workshop on Interactive, Ultra-High-Resolution Displays (POWERWALL), ***CHI***, Paris, France.

Patents

[P.2] Content navigation control, US Provisional Patent, (2017), Co-inventors: O'Hara, K., Smyth, G., Rintel, S., **Chattopadhyay, D.**

[P.1] Shot boundary detection based on co-occurrence matrices, Government of India Provisional Patent Application No. 2124/MUM/2008 A, Date filed: 03/10/2008, Date published: 30/07/2010, Co-inventors: **Chattopadhyay, D.**, Bhowmick, B.

Active Grants

[G.3] NIH: R01: SCH: INT: MyPHA: Automatically generating personalized accounts of inpatient hospitalization. $1,495,213 Co-PI, 2018–2022

[G.2] NIH: R56: Data Infrastructure and Gateway for Public Health Research on the Environmental Causes of Diseases. $106,562 Co-PI, 2018–2019

[G.1] NSF: MRI: Development of Continuum: A Virtualized Attentive Environment for Amplified Collaboration. $566,001 Co-PI, 2016–2019

Honors & Awards

Honors and Fellowships—

UbiComp/ISWC 2018 Best Poster Honorable Mention.	2018
CHI 2016 Late-Breaking Work (LBW) Best Paper Honorable Mention.	2016
Indiana University Graduate School IUPUI Chancellor's Scholar.	2016
SIGCHI Special Recognition, CHI 2015 reviewer	2015
Best graduate student in the IU School of Informatics and Computing, Indianapolis, USA.	2015
Premiere 10 Award, top 10 among all graduate and professional students at IUPUI.	2015
Elite 50 Award[1], Indianapolis, IN, USA.	2015
Indiana University–Purdue University Indianapolis (IUPUI) Fellowship. $22,000.	2012
Computer Science Chair Fellowship, Stony Brook University. $3000.	2009

Travel Awards—

IUPUI Graduate Office Travel Fellowship Award. $900	2015
NSF Travel Grant, TEI 2015 Doctoral Consortium (GSC), Stanford, CA, USA. $1200	2015
Microsoft Travel Award, ACM SRC, GHC, Minneapolis, MN, USA. $500.	2013
Xerox-Foundation Scholarship, GHC, Minneapolis, MN, USA. $800.	2013
IUPUI SoIC Travel Award, ACM TAPIA Conference, Washington D.C., USA. $1200.	2012
Carnegie Mellon University Honorarium, Art && Code, Pittsburgh, USA. $300.	2011
ACM scholarship, CRA-W Graduate Cohort Workshop, Boston, MA, USA. $1000.	2011

Invited Talks

Designing beyond-the-desktop technologies for older adults.
Department of Mathematics, Statistics, and Computer Science Colloquium, Marquette University, Milwaukee, WI. October 2018

Virtual characters in health-related assessments and interventions: some sociotechnical implications.
Keynote at the Work in the Age of Intelligent Machines Academy of Management Professional Development Workshop, Chicago. August 2018

Thinking about affordances to design intuitive, interactive Systems.
College of Computing and Digital Media Colloquium, De Paul University, Chicago. May 2018

From critique to collaboration: A fundamental rethinking of computerized clinical alerts.
Indiana Chapter of the Usability Professionals Association (UxPA), Indianapolis. March 2015

Touchless Circular Menus: Toward an intuitive UI for touchless interactions with large displays.
International Working Conference on Advanced Visual Interfaces *AVI*, Como, Italy. May 2014

Collaboration around wall-sized displays.
Statewide IT Conference, Bloomington, Indiana. October 2013

Designing the touchless user experience with wall-sized displays.
Indiana Chapter of the Usability Professionals Association (UxPA), Indianapolis. October 2013

Multimodal tagging of human motion using skeletal tracking with Kinect.

[1]Elite 50 recognizes and rewards achievement outside the classroom, representing the top 0.5 percent of about 8,100 graduate and professional students at IUPUI.

Art && Code 3D Workshop. Carnegie Mellon University, Pittsburgh. October 2011

Shot boundary detection using texture feature based on co-occurrence matrices.
International Conference on Multimedia, Signal Processing and Communication Technologies, Aligarh Muslim University, Aligarh, India. March 2009

Non Peer-Reviewed Publications & Posters

Habibi, P., & **Chattopadhyay, D.** (2018). Touchless Performance in Non-Preferred Hands. Poster presented at the CRA-W Grad Cohort 2018, San Francisco, CA.

Sakhnini, N., & **Chattopadhyay, D.** (2018). Walking the talk: Generating memory cues to help people with dementia in everyday conversations. Poster presented at the Role/Play: Collaborative Creativity and Creative Collaborations Student Fellows Symposium. National Academy of Sciences, Washington, D. C.

Bolchini, D., **Chattopadhyay, D.**, Jia, Y., Rohani Ghahari, R. & Duke, J., D. (2016). From critique to collaboration: A fundamental rethinking of computerized clinical alerts. Poster, IUPUI Research Day, Indianapolis, Indiana.

Bolchini, D., Duke, J. D., **Chattopadhyay, D.**, & Rohani Ghahari, R. (2015). From critique to collaboration: A fundamental rethinking of computerized clinical alerts. Poster presented at NSF SCH PI Workshop, Washington D.C..

Chattopadhyay, D., & Bolchini, D. (2014). Understanding visual feedback in large-display touchless interactions: an exploratory study. IUPUI Scholar Works, Indiana University.

Chattopadhyay, D., Achmiz, S., & Bolchini, D. (2014). Next-generation interaction with ultra large, wall-sized displays. Poster, IUPUI Research Day, Indianapolis, Indiana.

Chattopadhyay, D. (2013). A Stopper metaphor for persistent visual feedback in touchless interactions with wall-sized displays. Poster, ACM Student Research Competition at The GHC Women in Computing, Minneapolis, Minnesota.

Wei, P., **Chattopadhyay, D.**, & Bolchini, D. (2013). The WADER environment: facilitating systematic design of touchless interactions with wall-size displays. Poster co-presented at the IUPUI Research Day, Student Showcase, IUPUI Campus Center, Indianapolis, Indiana.

Chattopadhyay, D., He, L., Jia, Y., & Bolchini, D. (2012). Novel interaction techniques for collaborating on wall-sized displays. Poster, IUPUI Research Day, Indianapolis, Indiana.

Chattopadhyay, D., Vallier, T., Berg, T., L., & Schedel, M. (2011). What does your Moonwalk sounds like? Tagging moves with music. Poster, CRA-W Graduate Workshop, Boston, MA.

Chattopadhyay, D., Yamaguchi, K., Ordonez, V., & Berg, T., L. (2010). Internet vision: What can we do with 10 billion pictures (and words). Poster, NSF I/UCRC Workshop on Dynamic Data Analytics, New York, NY.

Teaching

Department of Computer Science, UIC

User Interface Design and Programming (CS 422) — Spring 2019
Students enrolled: 89

Ways of Knowing: Empirical Methods in Human-Centered Computing (CS 594) — Fall 2018
Students enrolled: 9, A awarded: 8
Evaluation ($n = 7$): Instructor—4.71/5; Course—4.71/5

User Interface Design and Programming (CS 422) — Spring 2018
Students enrolled: 68, A awarded: 25
Evaluation ($n = 11$): Instructor—3.82/5; Course—4.18/5

Human-Computer Interaction (CS 522) — Fall 2017
Students enrolled: 35, A awarded: 24
Evaluation ($n = 29$): Instructor—4/5; Course—3.9/5

Human-Computer Interaction (CS 522) — Spring 2017
Students enrolled: 22, A awarded: 12
Evaluation ($n = 16$): Instructor—4.38/5; Course—4.25/5

School of Informatics and Computing, Indiana University, Indianapolis

Introduction to Informatics (INFO 501) — Spring 2015
Co-Instructor, Introduction to Informatics (INFO 501) — Spring 2014

Teaching Assistant
School of Informatics and Computing, Indiana University, Indianapolis

User Experience Architectures (Graduate course) — Summer – 2014, 2015
Psychology of HCI (Graduate course) — Fall 2013
Introduction to Research in Informatics (Undergraduate course) — Spring 2012
Serious Games (Undergraduate course) — Fall 2011
Psychology of Media (Undergraduate course) — Fall 2011

Computer Science Department, Stony Brook University, New York

Introduction to Programming (Undergraduate course) — Spring 2010
Computer Science I (Undergraduate course) — Spring 2010
Introduction to Computer Science (Undergraduate course) — Fall 2009

Guest Lectures

Research Methods in HCI, Department of Computer Science, UIC — February 2018
Research Methods in HCI, Department of Computer Science, UIC — February 2017
Designing for Empathy in Virtual Humans, Department of Communications, UIC — Apri 2017

School of Informatics and Computing, Indiana University, Indianapolis

Informatics Research Design, Empirical Research in HCI — November 2015
Seminar in Health Informatics-I, Usability Testing & Wall Display Research — July 2013
Serious Games, Introduction to Behavioral Theories — October 2011

Psychology of Media, Introduction to Persuasion Theories October 2011

Service

Peer-Review

Panel:

University of Illinois, Discovery Partners Institute (DPI) Seed Program, 2019
NSF, Small Business Innovation Research (SBIR), 2018
NSF, Computer & Information Science & Engineering (CISE), 2017

Organizing Committee:

GCASR, Poster and Web Chair 2018

Program Committee:

IUI, ACM International Conference on Intelligent User Interfaces 2015, 2019
CHI, ACM Conference on Human Factors in Computing Systems 2019
CHI LBW, ACM Conference on Human Factors in Computing Systems 2019

Editorial Board:

Human-Media Interaction, Frontiers in Psychology, ICT and Digital Humanities journal(s) 2018–

Conference Reviewer:

HRI: ACM/IEEE International Conference on Human-Robot Interaction 2017–2019
DIS: ACM SIGCHI Designing Interactive Systems 2018
GI: Graphics Interface 2018
ISS: ACM International Conference on Interactive Surfaces and Spaces 2017
SUI: ACM Symposium on Spatial User Interaction 2017
CHI: ACM Conference on Human Factors in Computing Systems 2015–2017
TEI: ACM International Conference on Tangible, Embedded and Embodied Interaction 2017
ASSETS: ACM SIGACCESS Conference on Computers and Accessibility 2016
AVI: International Working Conference on Advanced Visual Interfaces 2016
INTERACT: IFIP TC.13 International Conference on Human-Computer Interaction 2015
UbiComp: ACM International Joint Conference on Pervasive and Ubiquitous Computing 2014
NordiCHI: Nordic Conference on Human-Computer Interaction 2014
ENTER: eTourism Conference 2013
ACM Multimedia 2010

Journal Reviewer:

PACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) 2018–
Frontiers in Psychology 2016–
International Journal of Human-Computer Studies 2017
Cognition 2016
International Journal of Social Robotics 2016
PLoS ONE 2016
Interacting with Computers 2015
The Visual Computer 2014

Advising

Department of Computer Science, UIC

Ph.D. students

Harish Naik	Spring 2017 –
Pantea Habibi	Spring 2017 –
Ja Eun Yu	Fall 2017 –
Hasti Sharifi	Fall 2018 –

M.S. students

Nina Sakhnini (Thesis track)	Summer 2017 –
Venkata Ramkiran Chevendra (Project track)	Summer 2017 – Spring 2018
Debkanya Mazumder	Spring 2017

Undergraduate students

Anthony Beltran, UIC	Summer 2018
Kaveesha Weerasiri, UIC	Summer 2018
Mariko Kamiya, Swarthmore College, DREU scholar	Summer 2017
Taylor Day, Texas A&M, DREU scholar	Summer 2017
Giovanni Garcia, UIC Honors College	Summer 2017
Jack Delaney, UIC	Summer 2017
Maxwell Dausch, UIC	Summer 2017

Ph.D. Committees

Kristina Sawyer, Prelims committee.	2018 –
Tomas Gerlich, Dissertation committee. *Rigid multi-motion optical flow estimation.*	2017
Sabita Acharya, Dissertation committee. *Generating personalized hospital-stay summaries for patients.*	2016–

MS Project Committees

Khushbu Durge. *Activity recognition using android accelerometer sensor*	2018

Written Critique and Presentation (WCP) Committees

Mojtaba Malekpourshahraki.	2019
Pantea Habibi. *User-Defined Gestural Interaction.*	2018
Harish Naik. *Proxemics: Characterization and Applications in Collaborative Work*	2018
Hai Thanh Tran. *Utilizing textual content from online communities to provide better support to patients*	2018
Kyle Almryde. *Electronic Health Data Visualization: A summary and Critical Review*	2017

Student Organizations

Audio Engineering Society	Fall 2017 –

School of Informatics and Computing, Indiana University, Indianapolis

Pankaj Avhad, MS (HCI) —with Davide Bolchini	2015 – 2016
Manisha Yogan, MS (HCI) —with Karl F. MacDorman	Spring 2015
Shivin Saxena, MS (HCI) —with Stephen Voida	Summer 2014
Malvika Bansal, MS (HCI) —with Stephen Voida	Summer 2014

Wei Pan, MS (HCI) —with Davide Bolchini 2012 – 2013

Administrative

Department of Computer Science, UIC

Member, Tenure-Track Search Committee (with Learning Sciences) 2018 – 2019
Member, Tenure-Track Search Committee 2017 – 2018
Member, Graduate Committee Spring 2017
Marshalled CS Commencement May 2017

Indiana University–Purdue University, Indianapolis

Chair, ACM-W Chapter 2013 – 2015
Graduate Vice-president, Women in Technology (WiT) student organization 2012 – 2014

School of Informatics and Computing, Indiana University, Indianapolis

Member, Human-Centered Computing (HCC) Tenure Track Search Committee 2014 – 2015
Member, Informatics Student Government (ISG) 2012 – 2013

Stony Brook University, Stony Brook, New York

Secretary, ACM-W Chapter, Women in Computer Science (WiCS) 2009 – 2011
Juror, Hearing Board of the Academic Judiciary, Computer Science Department 2010 – 2011

Outreach

[S.9] Invited Speaker, UIC Engineering Living-Learning Community.
Chicago, Illinois November 2017

[S.8] Visiting Speaker, Introduction to Human-Computer Interaction. Recruitment talk at Fishers High School, Fishers, Indiana. November 2014

[S.7] Visiting Speaker, Natural User Interfaces: What's so unnatural about them? Research outreach talk to high school students at Park Tudor School, Indianapolis. October 2014

[S.6] Visiting Speaker, Introduction to Human-Computer Interaction. Research outreach talk to high school students at Park Tudor School, Indianapolis. September 2014

[S5] Coordinator, Touchless Interaction with Large Displays. Research demo at the 2013 City of Indianapolis VEX Robotics Championship, Banker's Life Fieldhouse, Indianapolis. November 2013

[S.4] Guest Speaker, Wall Display User Experience Research. Presented at an outreach event to 130 high school students visiting the IUPUI School of Informatics and Computing Campus from central Indiana, School of Informatics and Computing, Indianapolis, Indiana. June 2013; September 2013

[S.3] Guest Speaker, Women in Technology, U.S. Department of State's International Visitor Leadership Program. IUPUI, Indianapolis. April 2013

[S.2] Organizer and Emcee, Speed Presentation, Women in Technology Annual Networking Event. IUPUI Campus Center, Indianapolis, Indiana. March 2013

[S.1] Guest Speaker, Touchless Interaction with Large Displays. Presented at an outreach event to 85 high school students visiting the IUPUI School of Informatics and Computing Campus from