

# Debaleena Chattopadhyay

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RESEARCH INTEREST Human-computer interaction; focusing on designing, prototyping, and evaluating intuitive user experiences, particularly working on socio-technical systems, mid-air gestures, and cognitive science.

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

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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*, 1–44.

[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

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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.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., & Volda, S. (2014). Holes, pits, and valleys: guiding large-display touchless interactions with data-morphed topogra-

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phies. 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.

GRANTS

[G.2] NIH: 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—**

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<sup>1</sup>, 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

NON  
PEER-REVIEWED  
PUBLICATIONS &  
POSTERS

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

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<sup>1</sup>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.

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Research Day, Indianapolis, USA.

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., USA.

**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, USA.

**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, USA.

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, USA.

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

**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, USA.

**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, USA.

INVITED  
TALKS

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

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

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

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

Wall display user experience research. Invited presentation for the national meetup of the Pearson UX team, July, 2013, SoIC, Indianapolis, Indiana, USA.

Multimodal tagging of human motion using skeletal tracking with Kinect. Art && Code 3D Work-

shop, October, 2011, Carnegie Mellon University. Pittsburgh, USA.

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

## TEACHING

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### TEACHING

#### **Department of Computer Science, UIC**

Ways of Knowing: Empirical Methods in Human-Centered Computing (CS 594) Fall 2018

User Interface Design and Programming (CS 422) Spring 2018

Students enrolled: 68

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 April, 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

**SERVICE**

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PEER-REVIEW

**Panel:**

NSF, Computer & Information Science & Engineering (CISE), 2017

NSF, Small Business Innovation Research (SBIR), 2018

**Organization:**

GCASR 2018, Poster and Web Chair

**Conferences:**

DIS 2018: ACM SIGCHI Designing Interactive Systems

GI 2018: Graphics Interface

HRI 2018: ACM/IEEE International Conference on Human-Robot Interaction

ISS 2017: ACM International Conference on Interactive Surfaces and Spaces

SUI 2017: ACM Symposium on Spatial User Interaction

CHI 2017: ACM Conference on Human Factors in Computing Systems

HRI 2017: ACM/IEEE International Conference on Human-Robot Interaction

TEI 2017: ACM International Conference on Tangible, Embedded and Embodied Interaction

ASSETS 2016: ACM SIGACCESS Conference on Computers and Accessibility

AVI 2016: International Working Conference on Advanced Visual Interfaces

CHI 2016 Late Breaking Work: ACM Conference on Human Factors in Computing Systems

INTERACT 2015: 15th IFIP TC.13 International Conference on Human-Computer Interaction

IUI 2015: ACM International Conference on Intelligent User Interfaces

CHI 2015: ACM Conference on Human Factors in Computing Systems

UbiComp 2014: ACM International Joint Conference on Pervasive and Ubiquitous Computing

NordiCHI 2014: Nordic Conference on Human-Computer Interaction

ENTER 2013: eTourism Conference

ACM Multimedia, 2010

**Journal:**

The Visual Computer

Interacting with Computers

Cognition

Frontiers in Psychology

International Journal of Social Robotics

PLoS ONE

International Journal of Human-Computer Studies

ADVISING

**Department of Computer Science, UIC**

PH.D. STUDENTS

Harish Naik

Spring 2017 –

Pantea Habibi

Spring 2017 –

Ja Eun Yu

Fall 2017 –

### M.S. STUDENTS

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

### UNDERGRADUATE STUDENTS

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

### COMMITTEES

Harish Naik, WCP committee <i>Proxemics: Characterization and Applications in Collaborative Work</i>	2018
Hai Thanh Tran, WCP committee <i>Utilizing textual content from online communities to provide better support to patients</i>	2018
Tomas Gerlich, Ph.D. Dissertation committee <i>Rigid multi-motion optical flow estimation</i>	2017
Kyle Almryde, WCP (Written Critique and Presentation) Chair <i>Electronic Health Data Visualization: A summary and Critical Review</i>	2017
Sabita Acharya, Ph.D. Dissertation committee <i>Generating personalized hospital-stay summaries for patients</i>	2016–

### STUDENT ORGANIZATIONS

Audio Engineering Society	Fall 2017
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### **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	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

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**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 Lead-  
ership Program. IUPUI Campus Center, 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  
Providence Cistro Rey High School. October, 2012