Aman Parnami, Ph.D.

Assistant Professor
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Education

Georgia Institute of Technology, Atlanta, USA
- Ph.D. Computer Science (Human-Computer Interaction, Industrial Design (minor)), 2013-2017
- Ph.D. Thesis Advisors: Dr. Gregory D. Abowd, Dr. Betsy DiSalvo

- M.S. Human-Computer Interaction, May 2013, GPA: 4.0
- M.S. Project Advisor: Dr. Ali Mazalek

Indian Institute of Technology, Mumbai, India
- B.Tech & M.Tech. Computer Science, 2008
- M.Tech. Thesis Advisor: Dr. Sharat Chandran

Research Interests

Wearable Computing, Rapid Prototyping Tools, Input and Interactions, Maker and Design Education

Professional Experience

Research Intern
Natural Interaction Group, Microsoft Research, Redmond, May–August 2014, 2015
- Worked with *Dr. Mike Sinclair* on the development of a fabrication tool that aids in rapid prototyping of 3d functional devices with embedded electronics.

User Experience Research Intern
Mobile and Communications Group, Intel, May–August 2013
- Surveyed existing interactions and gestures on mobile devices and devised new ones along with an analysis of impact on platform architecture.
- Led to a patent [P1].

Research Assistant
Georgia Institute of Technology, August 2011–Present
- Enable new interactions using mobile, wearable, and environmental sensors.
- Build applications for mobile devices and interactive tabletops.

Interaction Designer
Self Employed, November 2010–June 2011
- Developed a Customer Relationship Management system for the sales team of a start-up.
- Advised design and development teams remotely of another start-up in Michigan.

Lead Interaction Designer
Standard Chartered Bank, August 2008–July 2010
- Initiated user-centered design process in the development of financial applications for web and mobile.
- Designed wireframes and prototypes to define interactions.
- Led visual designers, and front-end developers and back-end developers.

Research Assistant
Indian Institute of Technology, May 2007–July 2008
- Worked on an Indian army sponsored project to develop a 3D shooting range simulator.

Teaching Assistant
Indian Institute of Technology, Summer 2006
- Assisted students and graded assignments for the introduction to object oriented programming course.

Research Experience

Ph.D. Thesis: Enabling Rapid Motion Gesture Design In Situ
Advisors: Dr. Gregory D. Abowd & Dr. Betsy DiSalvo, August 2013–May 2017
- Developed first mobile tool that supports rapid, in situ, and context-based prototyping of usable, recognizable, and appropriate motion gestures for wearables.
- Evaluated the tool with professional and student designers. [**A6**], [**D3**]

BackTap
Advisor: Dr. Gregory D. Abowd, May 2012–March 2013
- Developed novel interactions on the back case of a smartphone with the existing sensors on the device.
- Conducted evaluation with 24 participants. [**D1**]

Activity Recognition In-The-Wild
Advisor: Dr. Gregory D. Abowd, November 2012–May 2013
- Assisted with the work on inferring eating activity from first person point-of-view images and sensor data collected on a wearable device. [**A2**], [**A3**], [**A5**]

Tangible Anchoring
Advisor: Dr. Ali Mazalek, August 2011–present
- Designed and implemented tangible interactions, information visualizations, and scenarios for this novel approach of news broadcast through a tabletop. [**A4**]

MS-HCI Project: VersTang: Changeable Tangibles
Advisor: Dr. Ali Mazalek, January–May 2013
- Fabricated dynamic tangibles that change identity, sense context of use, and provide appropriate feedback at run-time.

Thesis: Building Vision Based Applications of ProCams
Advisor: Dr. Sharat Chandran, 2007–2008
- Developed a 3D shooting range simulator for soldiers using an off-the-shelf web camera and a projector.
- Examined the use of off-the-shelf cameras to replace the specialized hardware for automating correction of a projection on a non-ideal surface.

Teaching Experience

Instructor, Wearable Applications, Research, Design, and Interactions (WARDI), IIIT-Delhi, August–December 2017
- Encouraging and guiding explorations in the field of Wearable Computing through assignments, discussions, and projects.

Co-Instructor, Interactive Products Design, Georgia Institute of Technology, January–May 2014, August–December 2016
- Facilitating collaboration between industrial design and computer science students on designing, building and communication of interactive products.

Co-Instructor, Prototyping Interactive Systems, Georgia Tech., August–December 2014, 2015
- Exposing C.S. graduate students to tools for rapid prototyping of interactive systems that require both hardware, software, and fabrication skills.

Peer Reviewed Articles

A6 **Aman Parnami**, Apurva Gupta, Gabriel Reyes, Ramik Sadana, Yang Li, and Gregory Abowd. 2016. Mogeste: Mobile Tool for In-situ Motion Gesture Design. In Proceedings of IndiaHCI 16.

A5 Bettadapura, V.; Thomaz, E.; **Parnami, A.**; Essa, I.; Abowd, G. *"Leveraging Context to Support Automated Food Recognition in Restaurants,"* WACV '15: Proceedings of the Winter Conference on Applications of Computer Vision 2014.

A4 Susan Robinson, Graceline Williams, **Aman Parnami**, Jinhyun Kim, Dana Chandler, and Ali Mazalek. (2014) *Storied Numbers: Supporting Media-Rich Data Storytelling for Television.* TVX '14: Proceedings of the 1st International Conference on Interactive Experiences for Television & Online Video.

A3 Thomaz, Edison and **Parnami, Aman** and Essa, Irfan and Abowd, Gregory D. (2013) *Feasibility of Identifying Eating Moments from First-person Images Leveraging Human Computation.* SenseCam '13: Proceedings of the 4th International SenseCam & Pervasive Imaging Conference.

A2 Edison Thomaz, **Aman Parnami**, Jonathan Bidwell, Irfan Essa, Gregory D. Abowd. (2013) *Technological Approaches for Addressing Privacy Concerns When Recognizing Eating Behaviors with Wearable Cameras.* Ubicomp '13: Proceedings of the 15th International Conference on Ubiquitous Computing.

A1 Nithya Manickam, **Aman Parnami**, and Sharat Chandran (2006). *Reducing false positives in video shot detection using learning techniques.* In Proceedings of the 5th Indian conference on Computer Vision, Graphics and Image Processing (ICVGIP'06), Springer-Verlag, Berlin, Heidelberg, 421-432.

Conference Posters & Demos

D3 **Aman Parnami**, Apurva Gupta, Gabriel Reyes, Ramik Sadana, Yang Li, and Gregory Abowd. 2016. Mogeste: Mobile Tool for In-situ Motion Gesture Design. In Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing: Adjunct (UbiComp 16), 345-348.

D2 Riobo I., **Parnami A.**, Hernandez J., Abowd G. D., *"G.L.I.M.: Glass Live Interaction Monitor Live Internal State Interaction Monitor using Google Glass + EDA"*, In the Extended Abstract of IMFAR, Alanta, USA, May 2014.

D1 Zhang, Cheng and **Parnami, Aman** and Southern, Caleb and Thomaz, Edison and Reyes, Gabriel and Arriaga, Rosa and Abowd, Gregory D. (2013) *BackTap: Robust Four-point Tapping on the Back of an Off-the-shelf Smartphone.* UIST '13 Adjunct: Proceedings of the Adjunct Publication of the 26th Annual ACM Symposium on User Interface Software and Technology.

Patents

P1 Sengupta, U.K. and **Parnami, A.** and Kalluraya, P., *Adapting Interface Based on Usage Context.* US 20150177945 A1, Jun 25, 2015.

Awards, Honors & Scholarships

Completion Certificate, Google Summer of Code, Google, 2008

Winner, Google Product Prodigy Contest, Google, 2008

Third place, Lord of the Code, RedHat Scholarships, 2007 & 2008

Institute Sports Special Mention, Athletics, Indian Institute of Technology, 2004

Press

Knight lab (Northwestern University), "Computation + Journalism demo projects", Feb 2013

Georgia Tech's People and Technology Forum coverage, "Doing better storytelling with opinion polling", Nov 2012

The Hindu, "Let's salute these 'product prodigies'", March 2008

Coursework

Pattern Recognition, Georgia Tech.

Real-time Systems, Georgia Tech.

Machine Learning, Coursera.

Parametric Product Modeling, Georgia Tech.

Mobile and Ubiquitous Computing, Georgia Tech.

Interactive Products Design Lab, Georgia Tech.

Principle of User Interface Software, Georgia Tech.

Intro. to Human-Computer Interaction, Georgia Tech.

User Interface Design & Evaluation, Georgia Tech.

Skills

Research Methods: Participant Observation, Interviews, User Testing

Hardware Prototyping: Arduino, 3D Modeling & Printing, Laser Cutting, Lathe, Drill Press, CNC, Circuit Mill

Software Prototyping: Adobe Illustrator, Sketching, PowerPoint, Balsamiq

Programming Languages: HTML5, CSS, Javascript, PhP, Java, Python, Processing, C#

Development Tools: Visual Studio, Eclipse, TextMate

Applied Machine Learning: Weka, Matlab

Mobile Platform: Android

Advising

Masters Thesis@IIIT-Delhi
- Twishi Sagwal, August 2017 - Present

Undergraduate Thesis@IIIT-Delhi
- Himanshu Chandna, August 2017 - Present
- Yash Sherry, August 2017 - Present

Undergraduate Research@IIIT-Delhi
- Lakshay Dahiya, August 2017 - Present
- Sharmistha Swasti Gupta, August 2017 - Present

Masters Project@Georgia Tech
- Pratik Pravinkumar Shah, August 2016 - May 2017
- Apurva Gupta, August 2015 - May 2016

Undergraduate@Georgia Tech
- James Park, Vishvak Saivenkat Murahari, Mengyang Shi - Spring 2017
- James Park, Vishvak Saivenkat Murahari, Saqib Ali, Casey Barnette, Joshua Morton, Nicholas Stoltzfus - Fall 2016
- Fatma Dilara Soylu - Spring 2016
- Nikhil Kulkarni - Fall 2015
- Raj Prateek Kosaraju - Fall 2015

Service

Reviewer: CC (2017), TVW (2017), DIS (2017), CHI (2016,17), IMWUT (2017), MobileHCI (2016), Ubicomp (2016), ISWC (2016)

Judge: Design 360 (ESYA'17)

Student Volunteer: IndiaHCI (2016), UIST (2015), Ubicomp (2014), CHI (2012)

Workshop: *For OnShape Beginners*, Georgia Tech Invention Studio, October 2015

Workshop: *Physical Computing*, Georgia Tech Makers Club, October 2013

Campus Representative: *OnShape*, 2015-present

Workshop: *HTML and CSS*, Teach and Learn HCI Seminar, September 2012

Presentation: *Wireframing tools* , CS6750: Intro. to HCI course, February 2012

Workshop: *Arduino for beginners*, Aware Home Seminar, February 2012

Institute Student Mentor, Indian Institute of Technology, Mumbai, 2006–2007
- Mentored 30+ freshmen, giving counsel and helping them adjust smoothly to campus life and make the best of their first year.

Other Activities

Half Marathon, 2015–Present
- **01:27:35**, Pink City Marathon 2016, Bib# 497

Cross Country Running, *Silver Medalist*, 2004–2005
- Two times silver medalist in 5K racing events at Inter IIT Sports Meet.
- Recognized for consistently securing top two positions in inter-hostel athletic events.

Dance
- Trained in Bharatnatyam, Indo-Jazz, and Hip Hop to an intermediate level.
- Selected by a Bollywood choreographer amongst top 100/1500+ students training at his institute.

References

Dr. Gregory D. Abowd
Regents' Professor and J.Z. Liang Chair, Georgia Institute of Technology
✉ abowd@gatech.edu

Dr. Betsy DiSalvo
Assistant Professor, Georgia Institute of Technology
✉ bdisalvo@cc.gatech.edu

Dr. Ali Mazalek
Canada Research Chair, Ryerson University
✉ mazalek@ryerson.ca

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