Ramik Sadana

CS PhD, Georgia Institute of Technology
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I received my Ph.D. in Computer Science, with a specialization in HCI, from Georgia Tech in May 2017. I have acquired experience in researching and building systems in the areas of data visualization, natural-user interfaces, and ubiquitous computing. I'm deeply interested in helping design the future of human-computer interaction.

Education

2012–2017 **Ph.D. CS – Human-Computer Interaction**
Georgia Tech, Atlanta, Georgia

Advisor: John Stasko
Thesis: Data Visualization on Tablet Devices
My research focuses on the intersection of *data visualization* and *natural user interfaces*. I design and build interaction methods for touch devices that support knowledge discovery with data.

2010 – 2012 **M.S. Human-Computer Interaction**
Georgia Tech, Atlanta, Georgia

2005 – 2010 **M.S. (Integrated) Economics**
Indian Institute of Technology, Kanpur, India

Experience

July 2017 - now **Uber Technologies, San Francisco, CA**
Software Engineer (Research)

Area lead, Augmented Reality 2017 – now

- Built the Augmented Reality library for Uber's RIBs architecture to power AR experiences across all of Uber's iOS apps (Rider, Driver, Eats, Freight).
- Delivered an AR feature within the Uber rider app (released internally).
- Led the design and development of over a dozen prototype AR feature experiences across iOS (ARKit) and Android (ARCore) to scope the impact & challenges of specific technologies and product domains.
- Partnered with feature teams across Uber to evangelize the tech & identify product fit. Presented at discussions with leadership to chart out areas of interest and continued investment.
- Filed a patent and leveraged ongoing scientific research to inform product direction.
- Led discussions with AR platform companies and third-party tech companies for potential partnerships and investments.

Tech lead, Accessibility 2020 – now

- Leading the cross-company effort to revamp investment in accessibility.
- Tasked with delivering a top-notch in-app experience to current Uber users with disabilities.
- Managing effort to conceptualize and develop new products and experiences tailored to a 3x increase in the number of users with disability.

May – Aug 2015 Tableau Research, Palo Alto, CA
Research Intern, Mentor: Vidya Setlur

Designed and prototyped an interactive workflow for data cleaning and preparation within tablet-based business intelligence tools.

May – Dec 2014 Google Research, Mountain View, CA
Research Intern, Mentor: Yang Li

Developed an image processing tool for rapidly testing multi-touch interactions with video mockups of sample application behavior.

May – Aug 2013 Adobe Research, San Jose, CA
Research Intern, Mentor: Bongwon Suh, Eunyee Koh

Created a system to generate visual summaries of large collections of tweets to extract temporally relevant patterns and anomalies.

May – Aug 2012 Microsoft Research, Redmond, WA
Research Intern, Mentor: Danyel Fisher, Steven Drucker

Designed and prototyped a gesture-based and a WIMP-based interface for data-visualization on multi-touch handheld tablets.

May – Jul 2010 University of Calabria, Italy

Helped design, build and deploy a mixed media application comprising of 2D and 3D graphical models to enhance the engagement of the public in sites of historical, cultural or archeological significance.

Jul 2009 – Apr 2010 Technology Lead, Product Development Project,
Helsinki University of Technology, Finland

'The Future of Magazines' [sensemag.dy.fi]
Defined the future global expectations from the print and digital magazines. Identified, designed and developed alternative solutions based on new media.

Publications

Papers

2018 R. Sadana, M. Agnihotri, J. Stasko, "*Touching Data: A Discoverability-based Evaluation of a Visualization Interface for Tablet Computers*", arXiv, June 2018

2016 R. Sadana, J. Stasko, "*Expanding Selection for Information Visualization Systems on Tablet Devices*", ISS'16, Niagara Falls, Canada, Nov. 2016

2016 R. Sadana**,** V. Setlur, E. Koh, "*Redefining a Contribution for Immersive Visualization Research*", ISS'16*,* Niagara Falls, Canada, Nov. 2016

2016 A. Parnami, A. Gupta, G. Reyes, R. Sadana, Y. Li, G. Abowd, "*Mogeste: mobile tool for in-situ motion gesture design*", UbiComp'16 Adjunct, Heidelberg, Germany, Sep. 2016

2016 R. Sadana and Y. Li, "*Gesture Morpher: Video-based Retargeting of Multi-touch Interactions*", MobileHCI'16, Florence, Italy, Sep. 2016

2016 R. Sadana and J. Stasko, "*Designing Multiple Coordinated Visualizations for Tablets*", Eurovis'16, Groningen, Netherlands, June 2016

2014 R. Sadana, T. Major, A. Dove, J. Stasko, "*OnSet: A Visualization Technique for Large-scale Binary Set Data*", VIS'14, Paris, France, Nov. 2014

2014 R. Sadana**,** Y. Kim, B. Suh, E. Koh, *"A Visual Analytics Approach to Summarizing Tweets",* SIGIR'14 Industry Track, Gold Coast, Australia, July 2014

2014 R. Sadana and J. Stasko, "*Designing and Implementing an Interactive Scatterplot Visualization for a Tablet Computer*", AVI'14*,* Como, Italy, June 2014

2013 Drucker S., D. Fisher, R. Sadana, J. Herron, m. c. schraefel "*TouchViz: A case study comparing two interfaces for Data Analytics on Tablets*", CHI '13, Paris, France, May 2013

2013 Toth, C., W. Suh, V. Elango, R. Sadana, A. Guin, M. Hunter, and R. Guensler "*Tablet-Based Traffic Counting Application Designed to Minimize Human Error*." Transportation Research Record. National Academy of Sciences. Washington, DC. 2013.

Posters

2013 A. Dai, R. Sadana C. Stolper, J. Stasko, "*Hands-On, Large Display Visual Data Exploration*", VIS'15, Chicago, IL, Oct. 2015

2013 R. Sadana, A. Dove, J. Stasko, "*Whale Sharks, Boolean Set Operations, and Direct Manipulation*", VIS'13, Atlanta, GA, Oct. 2013

2013 R. Sadana and J. Stasko, "*Interacting with Data Visualizations on Tablets and Phones: Developing Effective Touch-based Gestures and Operations*", VIS'13, Atlanta, GA, Oct. 2013

2013 J. Stasko, J. Choo, Y. Han, M. Hu, H. Pileggi, R. Sadana, C. Stolper, "*CiteVis: Exploring Conference Paper Citation Data Visually*", VIS'13, Atlanta, GA, Oct. 2013

Invited Talks

2015 '*A Bit About Touch*' at OpenVIS 2015, Boston, MA, April 2015 [ramiksadana.com/openvis]

2015 '*Visualization on Touch Devices*' at McGraw Hill Educational Data Meetup, Boston, MA, April 2015

2013 '*Data + Touch: Explorations and Opportunities*' at workshop on 'Mobile and Breaking News: New Challenges for News Information Visualizations', VIS'13, Atlanta, GA, Oct. 2013

Other Projects

2016 TouchUndo, Mentors: John Stasko, Gregory Abowd

Research, design and prototyping to identify a standardized shortcut for *undo* and *redo* on touch-devices. [ramiksadana.com/undo]

2014 ARubi, Mentors: Gregory Abowd, Thad Starner

Designed a AR+Multitouch environment for in-air cross-device programming.

2012 Objects with Memories, Mentor: Gregory Abowd

Used NFC to support digital archiving and retrieval of memories associated with physical artifacts, leveraging and augmenting vision, audition and olfaction.

2011 The Third Eye, Mentors: Melody Jackson, Bruce Walker

Created a desktop tool for low-vision computer users that provides quick access to the accessibility features using multi-finger gestures on the touchpads.

Awards

2015 Google Faculty Research Award (with advisor John Stasko)

2013 – 2014 Adobe Student Research Grant

2013 Microsoft Research Alumni Travel Grant

2012 Georgia Aquarium Student Grant

Students Mentored

Graduate

2015 - 2017 Aakanksha Mirdha, MS HCI
'Expanding Vocabulary of Pressure-based Gestures on Handheld Mobile Devices.'

2015 - 2017 Meeshu Agnihotri, MS HCI
'Designing and Conducting User Evaluations for a Data-Visualization System on Tablets'

2013 Timothy Major, MS HCI
'Web-based Implementation of the OnSet Visualization System'

Undergraduate
2014 - 2016 Andrew Dai, BS CS (*Co-supervised with Chad Stolper)*
'Large-display, Multitouch Dust & Magnet' (VIS'15 poster)

2015 Se Yeon Kim, BS CS
'Web-based Food-Maps for Continental United States.'

2014 Vivek Srinivasan, BS CS
'Large-display, Multitouch Visualization System'

Academic Service

2015, 2013 Teaching Assistant – CS7450 Information Visualization

2011 – 2017 Reviewer – CHI, VIS, EuroVis and UIST

2014 Program Committee – ISVC 2014

2014 Student Volunteer – Eyeo Festival

2008 – 2009 General Secretary, Media Council, IIT Kanpur

2006 – 2008 Undergraduate Student Mentor, IIT Kanpur

Guest Lectures

2016 CS6452 – Prototyping Interactive Systems

- Introduction to Processing
- Overview of Mobile Interface Prototyping and Development

2015, 2013 CS7450 – Information Visualization

- Introduction to Processing
- Introduction to D3

References

John Stasko, Professor, Georgia Tech

Steven Drucker, Principal Researcher, Microsoft Research

Nicolas Garcia Belmonte, Engineering Lead, Facebook

Vidya Setlur, Researcher, Tableau Research

Gregory Abowd, Professor, Georgia Tech