

# GIERAD LAPUT

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## EDUCATION

**Carnegie Mellon University**, School of Computer Science  
4<sup>th</sup> Year Ph.D., Human-Computer Interaction  
Future Interfaces Group. Advisor: *Chris Harrison*

Aug 2013 - Present

### University of Michigan

M.S.I. Human-Computer Interaction, *In-major GPA 3.9 / 4.0*  
Advisor: *Eytan Adar*

Apr 2013

### University of Michigan

B.S. Electrical Engineering, *In-major GPA 3.8 / 4.0*  
Magna Cum Laude, 1<sup>st</sup> Place Senior Capstone Project

May 2009

## AWARDS AND HONORS

<b>Best Paper Nomination</b> , ACM CHI 2017 (top 4%)	2017
<b>Best Paper Award</b> , ACM UIST 2016 (top 1%)	2016
<b>Best Talk Award</b> , ACM UIST 2016 (2 of 77)	2016
<b>Fast Company Innovation by Design Award</b> , 15 recipients out of 1700 from 45 countries	2016
<b>Adobe Research Fellowship in Human-Computer Interaction</b> , 10 recipients from an international pool	2016
<b>Best Paper Nomination</b> , ACM CHI 2016 (top 4%)	2016
<b>Best Talk Award</b> , ACM UIST 2015 (1 of 70)	2015
<b>Best Paper Award</b> , ACM CHI 2015 (top 1%)	2015
<b>Google Ph.D. Fellowship Finalist</b> (Ranked #1 of 2 at CMU)	2015
<b>Qualcomm Innovation Fellowship</b>	2014
<b>Yahoo! InMind Fellowship</b>	2014
<b>Disney Research Fellowship</b>	2013
<b>MIT EECS Edwin Webster Fellowship</b> (declined)	2013
<b>Magna Cum Laude</b> , Computer Engineering and Electrical Engineering	2009

## PEER-REVIEWED PUBLICATIONS

- [20] **Laput, G.**, Zhang, Y., Harrison, C. 2017. Synthetic Sensors: Towards General-Purpose Sensing. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Denver, Colorado, May 6 - 11, 2017). CHI '17. ACM, New York, NY.
- [19] Das, S., **Laput, G.**, Harrison, C., Hong, J. 2017. Thumprint: Socially-Inclusive Local Group Authentication Through Shared Secret Knocks. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Denver, Colorado, May 6 - 11, 2017). CHI '17. ACM, New York, NY. **Best Paper Nomination.**
- [18] Xiao, R., **Laput, G.**, Zhang, Y., Harrison, C. 2017. Deus EM Machina: On-Touch Contextual Functionality for Smart IoT Appliances. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Denver, Colorado, May 6 - 11, 2017). CHI '17. ACM, New York, NY.
- [17] Zhang, Y., **Laput, G.**, Harrison, C. 2017. Electrck: Low-Cost Touch Sensing for Large, Irregular and Rapidly-Prototyped Objects. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Denver, Colorado, May 6 - 11, 2017). CHI '17. ACM, New York, NY.

- [16] He, L., **Laput, G.**, Brockmeyer, E., Froehlich, J., C. 2017. SqueezaPulse: Adding Interactive Input to Fabricated Objects Using Corrugated Tubes and Air Pulses. To appear in *Proceedings of the ACM symposium on tangible and embodied interaction* (Yokohama, Japan, March 20 - 23, 2017). TEI '17. ACM, New York.
- [15] **Laput, G.**, Xiao, R., Harrison, C. 2016. ViBand: High-Fidelity Bio-Acoustic Sensing Using Commodity Smartwatch Accelerometers. In *Proceedings of the ACM symposium on user interface software and technology* (Tokyo, Japan, October 16 - 19, 2016). UIST '16. ACM, New York. 321 - 333. **Best Paper Award and Best Talk Award.**
- [14] Zhou, J., Zhang, Y., **Laput, G.**, Harrison, C. 2016. AuraSense: Enabling Expressing Around-Smartwatch Interactions with Electric Field Sensing. In *Proceedings of the ACM symposium on User interface software and technology* (Tokyo, Japan, October 16 - 19, 2016). UIST '16. ACM, New York. 81 - 86.
- [13] Zhang, Y., Zhou, J., **Laput, G.**, Harrison, C. 2016. SkinTrack: Using the Body as an Electrical Waveguide for Continuous Finger Tracking on the Skin. In *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (San Jose, California, May 7 - 12, 2016). CHI '16. ACM, New York, NY. 1491 - 1503. **Best Paper Nomination.**
- [12] **Laput, G.**, Chen, X.A., Harrison, C. 2016. SweepSense: Ad Hoc Configuration Sensing Using Reflected Swept-Frequency Ultrasonics. in *Proceedings of the ACM International Conference on Intelligent User Interfaces* (Sonoma, California March 7 - 10, 2016). IUI '16. ACM, New York, NY. 332 - 335.
- [11] **Laput, G.**, Yang, C., Xiao, R., Sample, A., Harrison, C. 2015. EM-Sense: Touch Recognition of Uninstrumented, Electrical and Electromechanical Objects. In *Proceedings of the ACM symposium on User interface software and technology* (Charlotte, North Carolina, November 8 - 11, 2015). UIST '15. ACM, New York, NY. 157 - 166. **Best Talk Award. Fast Company Innovation by Design 2016 Winner, Student Category.**
- [10] **Laput, G.**, Chen, X.A., Harrison, C. 2015. 3D Printed Hair: Fused Deposition Modeling of Soft Strands, Fibers, and Bristles. In *Proceedings of the annual ACM symposium on User interface software and technology* (Charlotte, North Carolina, November 8 - 11, 2015). UIST '15. ACM, New York, NY. 593 - 597.
- [9] **Laput, G.**, Brockmeyer, E., Hudson, S.E., Harrison, C. 2015. Acoustruments: Passive, Acoustically-Driven, Interactive Controls for Handheld Devices. In *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Seoul, South Korea, April 18 - 23, 2015). CHI '15. ACM, New York, NY. 2161 - 2170. **Best Paper Award.**
- [8] **Laput, G.**, Lasecki, W., Weise, J., Xiao, R., Bigham, J., Harrison, C. 2015. Sensors: Adaptive, Rapidly Deployable, Human-Intelligent Sensor Feeds. In *Proceedings of the ACM conference on Human Factors in Computing Systems* (Seoul, South Korea, April 18 - 23, 2015). CHI '15. ACM, New York, NY. 1935 - 1944.
- [7] **Laput, G.**, Xiao, R., Chen, X.A., Hudson, S.E., Harrison, C. 2014. Skin Buttons: Cheap, Small, Low-Powered and Clickable Fixed-Icon Laser Projectors. In *Proceedings of the annual ACM symposium on User interface software and technology* (Honolulu, HI, October 5 - 8, 2014). UIST '14. ACM, New York, NY. 389 - 394. **Gizmodo Best UI Innovations of 2014.**
- [6] Adar, E., Dontcheva, M., **Laput, G.** 2014. CommandSpace: Modeling the Relationships Between Tasks, Descriptions and Features. In *Proceedings of the annual ACM symposium on User interface software and technology* (Honolulu, Hawaii, October 5 - 8, 2014). UIST '14. ACM, New York, NY. 167 - 176.
- [5] Xiao, R., **Laput, G.**, Harrison, C. 2014. Expanding the Input Expressivity of Smartwatches with Physical Pan, Twist, Tilt, and Click. In *Proceedings of the annual ACM conference on Human Factors in Computing Systems* (Toronto, Canada, April 26 - May 1, 2014). CHI '14. ACM, New York, NY. 193 - 196.
- [4] Dixon, M.E., **Laput, G.**, Fogarty, J. 2014. Pixel-Based Methods for Widget State and Style in a Runtime Implementation of Sliding Widgets. In *Proceedings of the annual ACM conference on Human Factors in Computing Systems* (Toronto, Canada, April 26 - May 1, 2014). CHI '14. ACM, New York, NY. 2231 - 2240.
- [3] **Laput, G.**, Dontcheva, M., Wilensky, G., Chang, W., Agarwala, A., Linder, J., Adar, E. 2013. PixelTone: A Multimodal Interface for Image Editing. In *Proceedings of the annual ACM conference on Human Factors in Computing Systems* (Paris, France, April 27 - May 2, 2014). CHI '13. ACM, New York, NY. 2185 - 2194.

- [2] **Laput, G.**, Lin, Y., Linnemeier, M., Vijjapurapu, R. 2012. StoryCubes: Connecting Elders in Independent Living Through Storytelling. In *Proceedings of the annual ACM conference Ext. Abst. on Human Factors in Computing Systems* (Austin, Texas, May 5 - 10, 2012). CHI '12. ACM, New York, NY. 1321 - 1326.
- [1] **Laput, G.**, Adar, E., Dontcheva, M., Li, W. 2012. Tutorial-Based Interfaces for Cloud-Enabled Applications. In *Proceedings of the annual ACM Symposium on User interface software and technology* (Cambridge, Massachusetts, October 7 - 10, 2012). UIST '12. ACM, New York, NY. 113 - 122.

## WORKSHOPS AND DEMOS

*Note: Workshops are non-archival, presented in the form of posters. Demos showcase live working prototypes to hundreds of venue attendees.*

- [8] **Laput, G.**, Yang, C., Xiao, R., Sample, A., Harrison, C. 2015. EM-Sense: Touch Recognition of Uninstrumented, Electrical and Electromechanical Objects. In *Proc. UIST '15 Demos*.
- [7] **Laput, G.**, Chen, X.A., Harrison, C. 2015. 3D Printed Hair: Fused Deposition Modeling of Soft Strands, Fibers, and Bristles. In *Proc. UIST '15 Demos*.
- [6] **Laput, G.**, Brockmeyer, E., Hudson, S.E., Harrison, C. 2015. Acoustruments: Passive, Acoustically-Driven, Interactive Controls. In *Proc. SIGGRAPH '15 ETECH*.
- [5] **Laput, G.**, Brockmeyer, E., Hudson, S.E., Harrison, C. 2015. Acoustruments: Passive, Acoustically-Driven, Interactive Controls for Handheld Devices. In *Proc. CHI '15 Demos*.
- [4] **Laput, G.**, Kim, Y. 2014. Physical Sensing Using Structured Annotations from Very Large Image Datastreams. In *Proc. HCOMP '14 Crowd-Camp Workshop*.
- [3] **Laput, G.**, Xiao, R., Chen, X.A., Hudson, S.E., Harrison, C. 2014. Skin Buttons: Cheap, Small, Low-Powered and Clickable Fixed-Icon Laser Projectors. In *Proc. UIST '14 Demos*.
- [2] Xiao, R., **Laput, G.**, Harrison, C. 2014. Enhancing the Input Expressivity of Smartwatches with Physical Pan, Twist, Tilt, and Click. In *CHI '14 Demos*.
- [1] **Laput, G.**, Adar, E., Dontcheva, M., Li, W. 2012. Tutorial-based interfaces for cloud-enabled applications. In *UIST '12 Demos*.

## INVITED PRESENTATIONS

- ACM SIGGRAPH 2017**, UIST Reprise Invited Presenter (Stanford, CA) Aug 2017  
*ViBand: High-Fidelity Bio-Acoustic Sensing Using Commodity Smartwatch Accelerometers*
- Stanford University**, Computer Science Department, HCI Group (Stanford, CA) Aug 2015  
*Opportunities for Expanding Device Interaction and Sensing Using Commodity Hardware*
- Disney**, Themed Entertainment Association (Pittsburgh, PA) Aug 2015  
*Acoustruments: Passive, Acoustically-Driven Input Controls for Handheld Devices*
- Google**, Demo Day (Mt. View, CA) Aug 2015  
*Smart Tactile and Haptic Feedback for Interactive Devices*
- Yahoo! Inc**, Yahoo Fellows Day (Santa Clara, CA) Dec 2014  
*Sensors: Adaptive, Rapidly-Deployable, Human-Intelligent Sensor Feeds*
- General Electric**, TechKnowledge Global Telecast Nov 2014  
*Rethinking Smartwatch I/O*
- Samsung**, Sensors and Devices Panel (San Jose, CA) June 2014  
*Expanding the Input Expressivity of Smartwatches*

## EMPLOYMENT EXPERIENCE

<b>Carnegie Mellon University</b> , School of Computer Science <i>Graduate Student Researcher</i> – Human-Computer Interaction Institute Faculty Collaborators: Chris Harrison, Scott Hudson, Jeff Bigham, and Anind Dey. Exploring novel sensing, display, and interaction techniques for smart environments and devices.	Aug 2013 to Present
<b>Microsoft Research</b> <i>Research Intern</i> . Natural User Interfaces Group. Supervisors: Ken Hinckley and Andy Wilson. Project scope undisclosed at the moment.	Summer 2017
<b>Google Research</b> <i>Research Intern / Software Engineer</i> . Collaborators: Alex Kauffman (Advanced Interaction Research), Murphy Stein (Daydream), Emre Karagozler (ATAP), Ivan Poupyrev (ATAP). Novel sensing and haptics.	Jun 2015
<b>Disney Research / Walt Disney Imagineering</b> <i>Research Associate</i> . Collaborators: Alanson Sample, Eric Brockmeyer, Elizabeth Carter, Chris Harrison, and Scott Hudson. Exploring novel sensing, hardware, and fabrication techniques for interactive systems and devices. Multiple publications.	Jun 2014
<b>University of Washington</b> , Computer Science and Engineering, DUB Group <i>Visiting Researcher</i> – Computer Science and Engineering, Seattle, Washington Mentors: James Fogarty and Morgan Dixon. Examined runtime enhancement and modeling of user interface widget state and style using pixel-based reverse engineering. Summer research work resulted in a publication.	Jun 2013
<b>Adobe Research</b> <i>Research Intern</i> – Adobe Research, San Francisco, CA Mentors: Mira Dontcheva, Gregg Wilensky and Aseem Agarwala. Examined novel multimodal interaction techniques for Photoshop and other Creative Suite products. Summer work resulted in a publication, and was demoed live at Adobe Tech Summit.	Jun 2012
<i>Past Employment, Volunteer, and Internships</i> Ford Motor Company, <i>Mobile Computing, Researcher</i> , Dearborn, MI Smart Sensors and Integrated Microsystems, <i>Researcher</i> , Detroit, MI General Electric, <i>Engineering Intern</i> , Louisville, KY	Aug 2009 Aug 2008 Aug 2007

## TEACHING EXPERIENCE

<b>Teaching Assistant</b> , Carnegie Mellon University Designing Human-Centered Systems ( <i>Undergraduate</i> )	Spring 2016
<b>Teaching Assistant</b> , Carnegie Mellon University User-Centered Research and Evaluation ( <i>Graduate</i> )	Fall 2015
<b>Teaching Assistant</b> , University of Michigan Fundamentals of Human Behavior ( <i>Graduate</i> )	Fall 2012
<b>Teaching Assistant</b> , University of Michigan Introduction to Programming ( <i>Undergraduate</i> )	Fall 2008
<b>Invited Guest Lectures</b> Software Systems for User Interfaces, “New Fabrication Technologies” Designing Human-Centered Systems, “Low-fi Prototyping” (with Chris Harrison) Electronics Prototyping Workshop (with Chris Harrison)	Fall 2015 Fall 2015 Fall 2014

## SELECTED PRESS COVERAGE

<b>WIRED</b> , Your Camera Wants to Kill the Keyboard	5/2017
<b>NPR (WESA FM)</b> , CMU Researchers Find If You Can Paint It, You Can Make It A Touch Screen	5/2017
<b>MIT Technology Review</b> , This Mega-Sensor Makes the Whole Room Smart	5/2017
<b>The Wall Street Journal</b> , How to turn anything into a touchpad	5/2017
<b>TechCrunch</b> , Google-funded 'super sensor' project brings IoT powers to dumb appliances	5/2017
<b>Uproxx</b> , A New Gadget Can Make Your Home 'Smart' Without Replacing Anything	5/2017
<b>COMPUTERWORLD</b> , Google, A.I. and the rise of the super-sensor	5/2017
<b>Android Authority</b> , This could turn your entire home into a smart home with a simple click	5/2017
<b>Discovery Channel</b> , Turn Anything into a Touchscreen With 'Electrick'	5/2017
<b>Engadget</b> , A smart home mega sensor can track what goes on in a room	5/2017
<b>Digital Trends</b> , Synthetic Sensors create a connected home without adding smart devices	5/2017
<b>Futurism</b> , A New "Mega-Sensor" Could Make Your Entire Home Smart	5/2017
<b>The Verge</b> , Electrick lets you spray touch controls onto any object or surface	5/2017
<b>Engadget</b> , Get ready to 'spray' touch controls onto any surface	5/2017
<b>Popular Mechanics</b> , High-Tech Spray Paint Can Make Anything Into a Touchscreen	5/2017
<b>TechCrunch</b> , New technique turns anything into a touch sensor	5/2017
<b>Daily Mail</b> , Graffiti goes hi-tech: Radical spray paint can turn ANYTHING into a touchpad	5/2017
<b>MIT Technology Review</b> , A Cheap, Simple Way to Make Anything a Touch Pad	5/2017
<b>Gizmodo</b> , Scientists Figure Out How to Turn Anything Into a Touchscreen Using Conductive Spray Paint	5/2017
<b>Newsweek</b> , Conductive Spray Paint Can Turn Any Surface Into a Touchscreen	5/2017
<b>CNET</b> , Turn Anything into a Touchscreen With 'Electrick'	5/2017
<b>New Scientist</b> , Spray-on touch controls give an interactive twist to any surface	5/2017
<b>TechCrunch</b> , How a tap could tame the smart home	5/2017
<b>The Verge</b> , Someday we might be able to use smart gadgets through electromagnetic emissions	5/2017
<b>New Atlas</b> , Single Synthetic Sensor keeps watch over entire room	5/2017
<b>MIT Technology Review</b> , Home Assistants Like Amazon Echo Could Be a Boon for Assisted Living	2/2017
<b>Fast Company</b> , A Smartwatch That Recognizes What You Touch	11/2016
<b>TechCrunch</b> , Overclocked Smartwatch Sensor Uses Vibrations to Sense Gestures, Objects and Locations	11/2016
<b>Gizmodo</b> , Brilliant Mod Makes Smartwatches Actually Useful	11/2016
<b>Yahoo! News</b> , A hacked smartwatch can tell what your hands are doing, holding or touching	11/2016
<b>The Verge</b> , Carnegie Mellon researchers hacked an LG smartwatch to turn it into a gesture device	11/2016
<b>Digital Trends</b> , Ingenious accelerometer hack could allow existing smartwatches to identify any object that you grab	11/2016
<b>Fast Company</b> , The Most Innovative Student Design of 2016	9/2016
<b>Scientific American</b> , Maker Movement Turns Scientists into Tinkerers	8/2016
<b>NPR Radio Broadcast</b> (Via WESA 90.5FM), "CMU's SkinTrack Technology Turns Your Forearm Into Smartwatch Trackpad"	6/2016
<b>MIT Technology Review</b> , "Use Your Arm as a Smart Watch Touch Pad"	5/2016
<b>The Verge</b> , "New Tech Turns Your Skin into a Touchscreen for your Smartwatch"	5/2016
<b>Huffington Post</b> , "New Tech Turns Your Arm Skin Into A 'Touchpad'"	5/2016
<b>CNN</b> , "This Watch Turns Your Arm into a Touchscreen"	5/2016
<b>Newsweek</b> , "Smart Ring Turns Your Skin into a Touchpad for your Smartwatch"	5/2016
<b>Yahoo! News</b> , "SkinTrack Turns Your Whole forearm into a Smartwatch Interface"	5/2016
<b>WIRED</b> , "SkinTrack Can Turn Your Skin into a Touchscreen"	5/2016
<b>TechCrunch</b> , "Want More Screen Space on Your Smartwatch? Put a ring on it..."	5/2016
<b>The Daily Mail (UK)</b> , "Frustrated with Tiny Smartwatch screens? Gadget Turns the Skin into a Touchpad"	5/2016
<b>Popular Science</b> , "This Smartwatch Turns Your Skin into a Touch Screen"	5/2016
<b>Inverse</b> , "Carnegie Mellon Can Turn Your Beautiful Skin into a Vast Smartwatch Trackpad"	5/2016
<b>Gizmodo</b> , "This New 'Skinterface' Could Make Smartwatches Suck Less"	5/2016
<b>Engadget</b> , "Navigate your Smartwatch by Touching Your Skin"	5/2016
<b>Mashable</b> , "Researchers Create Wild Skin-Touch Interface for Tiny Smart Watches"	5/2016
<b>Maxim</b> , "This Freakishly Futuristic Technology Lets You Use Your Skin as a Touchscreen"	5/2016
<b>Discovery Channel</b> , "Your Arm Could be the Touchpad"	5/2016
<b>Phys.org</b> , "SkinTrack Technology Turns Arm into Smartwatch Touchpad"	5/2016
<b>Tech Times</b> , "Fingertips Too Big For Your Tiny Smartwatch? SkinTrack Turns Your Forearm Into A Touchpad"	5/2016
<b>R&amp;D Magazine</b> , "Engineers Create Tool That Turns Skin into Touchpads"	5/2016
<b>PC Magazine</b> , "'SkinTrack' Turns Your Arm Into a Touch Screen"	5/2016
<b>The Next Web</b> , "SkinTrack Turns Your Skin into a Touch interface for Smartwatches"	5/2016
<b>R&amp;D Magazine</b> , "SweepSense Pauses Your Music When Earphones are Removed"	2/2016
<b>MIT Technology Review</b> , "Pause Your Tunes by Taking Out Your Earbuds"	2/2016
<b>NPR (WESA 90.5 FM, Radio Broadcast)</b> , "CMU Technology Syncs Smart Watch User's Actions With Helpful Apps"	11/2015
<b>BBC News</b> , Click (TV Programme, Aired Live), "The Smartwatch Gets Serious"	11/2015
<b>NBC News</b> , "Disney Smartwatch Knows What You're Touching and Tells You What to Do Next"	11/2015
<b>CBS (KDKA-FM 93.7 Pittsburgh Radio Interview)</b> , "A Smartwatch that Knows What You're Touching"	11/2015
<b>Discovery Channel</b> (Canada) Live Broadcast, "Smartwatch Turns Your Body into an Antenna"	11/2015
<b>Ars Technica</b> , "Disney's smartwatch prototype can identify and track everything you touch"	11/2015
<b>Vice Motherboard</b> , "Disney Designed a Smartwatch that Knows What You're Touching"	11/2015
<b>WIRED</b> , "EM-Sense Enabled Smartwatch Can Detect When You Touch a Doorknob"	11/2015



<b>Popular Mechanics</b> , "Disney's Wild New EMSense Tech Can Identify Any Gadget You Touch"	11/2015
<b>Discovery News</b> , "Smartwatch Turns Your Body into an Antenna"	11/2015
<b>Daily Mail (UK)</b> , "EM-Sense knows what you're touching and shows relevant information on its display"	11/2015
<b>WIRED (UK)</b> , "Disney's concept smartwatch knows what you're touching"	11/2015
<b>CNET (Japan)</b> , "EMSense identifies the type of electronic device you're touching"	11/2015
<b>Gizmodo</b> , "Your Smartwatch Might Soon Know Exactly What You're Touching"	11/2015
<b>Fast Company</b> , "This \$10 Hack Could Let Your Apple Watch Sense Everything You Touch"	11/2015
<b>New Scientist</b> , "No-touch smartwatch scans the skin to see the world around you"	11/2015
<b>Hacker News (Front Page)</b> , "Disney's EM-Sense Smartwatch, contextually determining what you're touching"	11/2015
<b>ACM Tech News</b> , "System Recognizes Objects Touched by User, Enabling Context-Aware Smartwatch Apps"	11/2015
<b>PSFK</b> , "Disney's Watch Can Tell What You're Holding, Opening Up World of Self-Contained Interactivity"	11/2015
<b>Digital Trends</b> , "Armed with electromagnetic sensors, Disney's new wearable can tell what you're touching"	11/2015
<b>Tech Spot</b> , "This smartwatch uses electromagnetic noise to identify what you're touching"	11/2015
<b>Hack A Day</b> , "Disney's Designing a Smartwatch that Knows What You're Touching"	11/2015
<b>Tech Radar</b> , "Disney made a smartwatch that tells you what you're touching"	11/2015
<b>Tech Times</b> , "Recognition Software Could Let Smartwatches Enable Context-Aware Apps"	11/2015
<b>Phys.org</b> , "System recognizes objects touched by user, enabling context-aware smartwatch apps"	11/2015
<b>TechCrunch</b> , "Researchers Can Now Create 3D-Printed (Plastic) Hair"	11/2015
<b>Fast Company</b> , "This Delicate Hair Is Artisan-Level 3-D Printing"	11/2015
<b>Business Insider</b> , "You can now use a 3-D printer to create artificial hair"	11/2015
<b>Cosmopolitan (UK)</b> , "You Can Now 3-D Print Hair"	11/2015
<b>Marie Claire</b> , "3-D Printers Are Now Making Hair: Is This the Future of Extensions?"	11/2015
<b>Hack A Day</b> , "Hair Enthusiasts Rejoice! Synthetic Follicles are Now 3D-Printable"	11/2015
<b>Plastics Today</b> , "Carnegie Mellon fur-bricates plastic hair with low-cost 3D printer"	11/2015
<b>Pittsburgh Post-Gazette</b> , "CMU researchers develop technique for printing hair strands"	11/2015
<b>Discovery Channel (Canada) Live Broadcast</b> , "Furbrication"	11/2015
<b>MIT Technology Review</b> , "You Can Now 3-D Print a Toupee"	10/2015
<b>New York Magazine</b> , "So Long, Weaves. 3-D Printers Can Now Make Hair"	10/2015
<b>CBS (Pittsburgh)</b> , "Carnegie Mellon Researchers Create 'Hair' With 3-D Printer"	10/2015
<b>NPR (WESA 90.5 FM Radio Broadcast)</b> , "Bad Hair Day? Try Printing It Instead"	10/2015
<b>CNET</b> , "3D-printed hair puts a coiffure on your plastic creations"	10/2015
<b>Engadget</b> , "3D printing hair is as easy as using a hot glue gun"	10/2015
<b>Gizmodo</b> , "Sorry, Hair Club—We Can Finally 3D-Print Hair"	10/2015
<b>Phys.org</b> , "Research team fur-bricates hair with inexpensive 3-D printer"	10/2015
<b>Tech Times</b> , "Researchers Use Hot Glue Gun Technology to Create 3D-Printed Hair Strand By Strand"	10/2015
<b>International Business Times</b> , "Sorry, Hair Club—We Can Finally 3D-Print Hair"	10/2015
<b>CMU Link</b> , "Acoustruments: Adding new functionality to smartphones by harnessing the power of sound"	7/2015
<b>WIRED</b> , "There's a Way to Control Phones With Sound, Not Electronics"	5/2015
<b>TechCrunch</b> , "Disney's Lab Builds Buttons That Work By Manipulating Soundwaves Rather Than Electricity"	4/2015
<b>IEEE Pervasive Mag</b> , "Acoustruments: Passive, Acoustically-Driven Interactive Controls for Handheld Devices"	4/2015
<b>Fast Company</b> , "Disney's Incredible iPhone Accessories Can Hear How You Touch Them"	4/2015
<b>Gizmodo</b> , "Disney Invented a Way To Control Your Phone Using the Sounds It Emits"	4/2015
<b>Mashable</b> , "Researchers use sound waves to control iPhones"	4/2015
<b>Engadget</b> , "Disney's 'acoustruments' can control phones using their own sounds"	4/2015
<b>PCWorld</b> , "Weird Disney tech lets you play Pied Piper to your smartphone"	4/2015
<b>GizMag</b> , "Acoustruments could add physical controls to smartphones – using nothing but a plastic tube"	4/2015
<b>Phys.org</b> , "Beyond the touchscreen: Researchers develop acoustically driven controls for smartphones"	4/2015
<b>TechSpot</b> , "Disney is using ultrasonic sound-waves to develop next generation smartphone accessories"	4/2015
<b>Science Daily</b> , "Acoustically driven controls created for smartphones"	4/2015
<b>CMU News</b> , "Beyond the Touchscreen: CMU, Disney Develop Acoustically Driven Controls for Handheld Devices"	4/2015
<b>WIRED</b> , "Human Smarts Plus AI Could Unlock Computer Vision"	4/2015
<b>PCWorld</b> , "Sensors app lets you crowdsource live camera monitoring"	4/2015
<b>Digital Trends</b> , "Sensors app uses your old smartphone and crowdsourcing for smart surveillance"	4/2015
<b>Gizmodo</b> , "One Old Android Phone Could Make All Your Dumb Things Smart"	4/2015
<b>Engadget</b> , "Scientists turn old smartphones into all-seeing eyes"	4/2015
<b>SlashGear</b> , "Sensors wants to make dumb stuff smart in your home"	4/2015
<b>TechXplore</b> , "Sensors: Making sense with live question feeds"	4/2015
<b>Gizmodo</b> , "The 7 Most Important UI and UX Ideas of 2014"	12/2014
<b>New York Times</b> , "In a Small Space, a Big Issue: Researchers Look at Ways to Fit Technology in Confined Spaces"	11/2014
<b>TechCrunch</b> , "Skin Buttons Are Working Buttons Projected Onto The Skin"	10/2014
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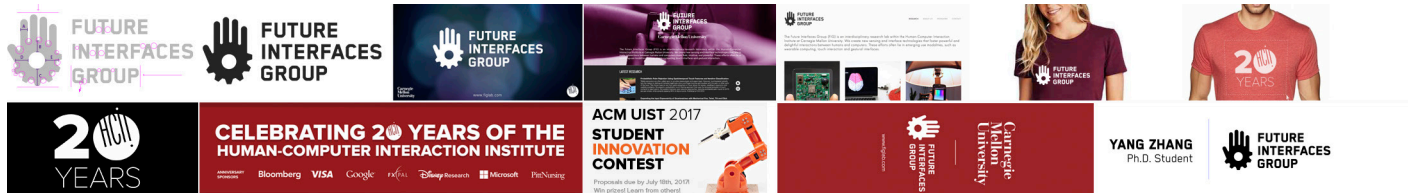
### Presented demos of my research to numerous companies and popular press, including:

Apple Inc., Google, Samsung, LG, Gizmodo, Engadget, Bosch Research, Akustica, Bayer Materials Science, NEXT Pittsburgh, Yahoo! Inc., Bank of America, Adobe Systems, SAP, Japan Displays Inc., Northrup-Grumman, and The Walt Disney Company.

## MISCELLANEOUS

**National Government Scholar**, Cebu City National Science High School  
**Detroit “Bring It” Band Competition** (Guitarist), Finalist, 2008  
**Drummer**, Disney Research (From Ottis Redding to Johnny Cash, to Adele and the Foo Fighters) Dec 2014 - Present  
**Half-Marathon** Finisher (13.1 mi), Martian Marathon – 1:50, Dearborn, MI, 04/2013  
**Half-Marathon** (13.1 mi), Let’s Move Festival of Races, 2nd Place in age group, Macomb, MI, 04/2011  
**Nike+** (Running) — Logged 773.0 miles of running (and counting)  
**FitBit** (Walking) — Average 15K steps per day. Logged 3,000+ Lifetime miles (and counting)  
**Apple Watch** (Swimming) — Logged 16,450+ Yards since Jan 2017 (and counting)

### Lab Identity and Event Branding (samples):



## REFERENCES

*Mentors and colleagues who have written references for me:*

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**Eytan Adar** (Associate Professor, CS and SI, University of Michigan)  
**Mark W. Newman** (Associate Professor, CS and SI, University of Michigan)  
**Mira Dontcheva** (Senior Research Scientist, Adobe Research)  
**James Fogarty** (Associate Professor, Computer Science and Engineering, University of Washington)  
**Alex Kauffmann** (Research Manager, Google)