

GIERAD LAPUT

Carnegie Mellon University
Human-Computer Interaction Institute
5000 Forbes Ave, Pittsburgh PA 15213

Email: gierad.laput@cs.cmu.edu
Website: <http://www.gierad.com>
Office: 407 S. Craig, #222

EDUCATION

Carnegie Mellon University, School of Computer Science
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, 1st Place Senior Capstone Project

May 2009

AWARDS AND HONORS

| | |
|---|------|
| Google PhD Fellowship , Ranked #1 at CMU School of Computer Science, 39 recipients worldwide | 2018 |
| Swartz Innovation Fellowship , \$100K Towards Entrepreneurship | 2018 |
| Fast Company Innovation by Design Award , Winner, 15 recipients out of 1700 | 2017 |
| Best Paper Award , ACM UIST 2016 (top 1%) | 2016 |
| Best Talk Award , ACM UIST 2016 (1 of 77) | 2016 |
| Best Paper Award , ACM CHI 2015 (top 1%) | 2015 |
| Best Talk Award , ACM UIST 2015 (1 of 70) | 2015 |
| Adobe Research Fellowship , Graduate Fellowship, 10 recipients from an international pool | 2016 |
| Qualcomm Innovation Fellowship | 2014 |
| Yahoo! InMind Fellowship | 2014 |
| Disney Research Fellowship | 2013 |

PEER-REVIEWED PUBLICATIONS

- [21] Carrington, P., **Laput, G.**, Bigham, J.P. 2018. Exploring Data Tracking and Sharing Preferences of Wheelchair Athletes. To appear In *Proceedings of the ACM annual conference on Computers and Accessibility* (Galway, Ireland, October 22 - 24, 2018). ASSETS '18. ACM, New York, NY.
- [20] **Laput, G.**, Zhang, Y., Harrison, C. 2017. Synthetic Sensors: Towards General-Purpose Sensing. 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. 3986 - 3999. **Fast Company Innovation by Design Nomination.**
- [19] Das, S., **Laput, G.**, Harrison, C., Hong, J. 2017. Thumprint: Socially-Inclusive Local Group Authentication Through Shared Secret Knocks. 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. 3764 - 3774. **Best Paper Nomination.**
- [18] Xiao, R., **Laput, G.**, Zhang, Y., Harrison, C. 2017. Deus EM Machina: On-Touch Contextual Functionality for Smart IoT Appliances. 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. 4000 - 4008.
- [17] Zhang, Y., **Laput, G.**, Harrison, C. 2017. Electrick: Low-Cost Touch Sensing for Large, Irregular and Rapidly-Prototyped Objects. To appear in *Proc. CHI '17* (Denver, Colorado, May 6 - 11, 2017). ACM, New York, NY. 1 - 14.

- [16] He, L., **Laput, G.**, Brockmeyer, E., Froehlich, J., C. 2017. SqueezaPulse: Adding Interactive Input to Fabricated Objects Using Corrugated Tubes and Air Pulses. In *Proc. of the ACM TEI '18* (Yokohama, Japan, March 20-23, 2017). 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 Award.**
- [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. Zensors: 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.

INVITED PRESENTATIONS

| | |
|---|----------|
| University of California - San Diego , HCI / Design Lab (San Diego, CA) <i>Practical Ubiquitous Contextual Sensing</i> | May 2018 |
| Qualcomm , HCI Invited Speaker (San Diego, CA) <i>Practical Ubiquitous Contextual Sensing</i> | May 2018 |
| Snap Research , Invited Speaker (Santa Monica, CA) <i>Practical Ubiquitous Contextual Sensing</i> | May 2018 |
| TechConnect World Sensors Symposium , Keynote Panels (Anaheim, CA) <i>Practical Ubiquitous Contextual Sensing. w/ Joe Paradiso, MIT Media Lab</i> | May 2018 |
| University of Michigan , Interactive and Social Computing Seminar Series (Ann Arbor, MI) <i>Unleashing Ubiquitous, Unobtrusive, and More Practical Contextual Sensing</i> | Mar 2018 |
| Pittsburgh City Council , PGH Labs 2.0 Invited Speaker (Ann Arbor, MI) <i>Sensors: Sensing Unleashed</i> | Dec 2017 |
| ACM SIGGRAPH 2017 , UIST Reprise Invited Speaker (Los Angeles, CA) <i>ViBand: High-Fidelity Bio-Acoustic Sensing Using Commodity Smartwatch Accelerometers</i> | Aug 2017 |
| Magic Leap , Magic Leap Research, Invited Speaker (Seattle, WA) <i>Synthetic Sensors: Towards General-Purpose Sensing</i> | Jun 2017 |
| Amazon Alexa Day , Invited Speaker (Pittsburgh, PA) <i>Synthetic Sensors: Towards General-Purpose Sensing</i> | May 2017 |
| US-China Innovation Summit , Panelist (Pittsburgh, PA) <i>Virtual Reality (VR) Panel</i> | Mar 2017 |
| Stanford University , Computer Science Department, HCI Group (Stanford, CA) <i>Opportunities for Expanding Device Interaction and Sensing Using Commodity Hardware</i> | Aug 2015 |
| Disney , Themed Entertainment Association (Pittsburgh, PA) <i>Acoustruments: Passive, Acoustically-Driven Input Controls for Handheld Devices</i> | Aug 2015 |
| Google , DayDream, Demo Day (Mt. View, CA) <i>Smart Tactile and Haptic Feedback for Interactive Devices</i> | Aug 2015 |
| Yahoo! Inc , Yahoo Fellows Day (Santa Clara, CA) <i>Sensors: Adaptive, Rapidly-Deployable, Human-Intelligent Sensor Feeds</i> | Dec 2014 |
| General Electric , Invited Speaker, TechKnowledge Global Telecast <i>Rethinking Smartwatch I/O</i> | Nov 2014 |
| Samsung , Invited Speaker, Sensors and Devices Panel (San Jose, CA) <i>Expanding the Input Expressivity of Smartwatches</i> | Jun 2014 |
| University of Michigan , A ² Data Dive (Ann Arbor, MI) <i>Human-Centered Natural language Processing and Tools</i> | Feb 2013 |

EMPLOYMENT EXPERIENCE

- Carnegie Mellon University**, School of Computer Science Aug 2013 to Present
Graduate Student Researcher – 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.
- Microsoft Research** Jun 2017
Research Intern. Natural Interactions Group. Supervisors: Ken Hinckley, Bill Buxton.
Project scope undisclosed at the moment.
- Google Research** Jun 2015
Research Intern / Software Engineer. Collaborators: Alex Kauffman (Advanced Interaction Research), Murphy Stein (Daydream), Emre Karagozler (ATAP), Ivan Poupyrev (ATAP). Novel sensing and haptics.
- Disney Research / Walt Disney Imagineering** Jun 2014
Research Associate. 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.
- University of Washington**, Computer Science and Engineering, DUB Group Jun 2013
Visiting Researcher – 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.
- Adobe Research** Jun 2012
Research Intern – 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.
- Past Employment, Volunteer, and Internships*
- Ford Motor Company, *Mobile Computing, Researcher*, Dearborn, MI Aug 2009
Smart Sensors and Integrated Microsystems, *Researcher*, Detroit, MI Aug 2008

ACADEMIC SERVICE

- Editor-in-Chief**, ACM XRDS Magazine
Program Committee, Co-Chair, ACM UIST 2019 Demos
Program Committee, Associate Chair (AC), ACM CHI 2019 Papers and Notes
Program Committee, Associate Chair (AC), ACM UIST 2018 Papers and Notes
Program Committee, Associate Chair (AC), ACM CHI 2018 Papers and Notes
Program Committee, Co-Chair, ACM UIST 2018 Student Innovation Contest (SIC)
Program Committee, Co-Chair, ACM UIST 2017 Student Innovation Contest (SIC)
Program Committee, Workshop Organizer, ACM MobileHCI 2017
Program Committee, Associate Chair (AC), ACM CHI 2017 Late Breaking Work
Program Committee, Associate Chair (AC), ACM CHI 2016 Late Breaking Work
Session Chair, ACM CHI 2018 Session on Sensing and Tangibles
Session Chair, ACM CHI 2017 Session on Sensing and Input
Faculty Hiring Committee, 2017 Cycle, Carnegie Mellon University, Human-Computer Interaction Institute

Selected as Reviewer (100+ papers so far):

ACM CHI '13 '14 '15 '16 '17 '18, ACM UIST '14 '15 '16 '17 '18, ACM UbiComp '15 '16 '17 '18,
ACM DIS '17 '18, ACM MobileHCI '15 '16 '17 '18, ACM TOCHI '15, ACM ICMI '15 '17, ACM IUI '16 '17,
ACM TvX '16, ACM ISS '16, IEEE Potentials '16, TEI '16 '17, ACM Automotive UI '17, NordiCHI '18

Demos: Apple Inc., Google, Samsung, LG, Gizmodo, Engadget, Bosch Research, Akustica, Bayer Materials Science, NEXT Pittsburgh, Yahoo! Inc., Bank of America, Adobe Systems, SAP, US Air Force, Northrup-Grumman, and Walt Disney.

TEACHING EXPERIENCE

| | |
|---|-------------|
| Teaching Assistant , Carnegie Mellon University Designing Human-Centered Systems (<i>Undergraduate</i>) | Spring 2016 |
| Teaching Assistant , Carnegie Mellon University User-Centered Research and Evaluation (<i>Graduate</i>) | Fall 2015 |
| Teaching Assistant , University of Michigan Fundamentals of Human Behavior (<i>Graduate</i>) | Fall 2012 |
| Teaching Assistant , University of Michigan Introduction to Programming (<i>Undergraduate</i>) | Fall 2008 |
| Invited Guest Lectures | |
| Pervasive and Ubiquitous Computing (invited by Mayank Goel) | Fall 2017 |
| Software Systems for User Interfaces, "New Fabrication Technologies" (invited by Anind Dey) | Fall 2015 |
| Designing Human-Centered Systems, "Low-fi Prototyping" (invited by Chris Harrison) | Fall 2015 |
| Electronics Prototyping Workshop (invited by Chris Harrison) | Fall 2014 |

SELECTED PRESS COVERAGE

| | |
|---|---------|
| Bloomberg: Innovator Profile , Gierad Laput: This Cracker-Size Sensor Can Tell You Which Oven Burner You Left On | 9/2017 |
| NPR All Tech Considered , Our Homes May Get Smarter, But Have We Thought It Through? | 8/2017 |
| NPR (WESA FM) , CMU Grad Students' Universal Sensor Could Make The Internet Of Things Cost Less And Do More | 7/2017 |
| WIRED , Your Camera Wants to Kill the Keyboard | 5/2017 |
| MIT Technology Review , This Mega-Sensor Makes the Whole Room Smart | 5/2017 |
| The Wall Street Journal , How to turn anything into a touchpad | 5/2017 |
| TechCrunch , Google-funded 'super sensor' project brings IoT powers to dumb appliances | 5/2017 |
| Uproxx , A New Gadget Can Make Your Home 'Smart' Without Replacing Anything | 5/2017 |
| COMPUTERWORLD , Google, A.I. and the rise of the super-sensor | 5/2017 |
| Android Authority , This could turn your entire home into a smart home with a simple click | 5/2017 |
| Discovery Channel , Turn Anything into a Touchscreen With 'Electrick' | 5/2017 |
| Engadget , A smart home mega sensor can track what goes on in a room | 5/2017 |
| Digital Trends , Synthetic Sensors create a connected home without adding smart devices | 5/2017 |
| Futurism , A New "Mega-Sensor" Could Make Your Entire Home Smart | 5/2017 |
| The Verge , Electrick lets you spray touch controls onto any object or surface | 5/2017 |
| NPR (WESA FM) , CMU Researchers Find If You Can Paint It, You Can Make It A Touch Screen | 5/2017 |
| Engadget , Get ready to 'spray' touch controls onto any surface | 5/2017 |
| Popular Mechanics , High-Tech Spray Paint Can Make Anything Into a Touchscreen | 5/2017 |
| TechCrunch , New technique turns anything into a touch sensor | 5/2017 |
| Daily Mail , Graffiti goes hi-tech: Radical spray paint can turn ANYTHING into a touchpad | 5/2017 |
| MIT Technology Review , A Cheap, Simple Way to Make Anything a Touch Pad | 5/2017 |
| Gizmodo , Scientists Figure Out How to Turn Anything Into a Touchscreen Using Conductive Spray Paint | 5/2017 |
| Newsweek , Conductive Spray Paint Can Turn Any Surface Into a Touchscreen | 5/2017 |
| CNET , Turn Anything into a Touchscreen With 'Electrick' | 5/2017 |
| New Scientist , Spray-on touch controls give an interactive twist to any surface | 5/2017 |
| TechCrunch , How a tap could tame the smart home | 5/2017 |
| The Verge , Someday we might be able to use smart gadgets through electromagnetic emissions | 5/2017 |
| New Atlas , Single Synthetic Sensor keeps watch over entire room | 5/2017 |
| MIT Technology Review , Home Assistants Like Amazon Echo Could Be a Boon for Assisted Living | 2/2017 |
| Fast Company , A Smartwatch That Recognizes What You Touch | 11/2016 |
| TechCrunch , Overclocked Smartwatch Sensor Uses Vibrations to Sense Gestures, Objects and Locations | 11/2016 |
| Gizmodo , Brilliant Mod Makes Smartwatches Actually Useful | 11/2016 |
| Yahoo! News , A hacked smartwatch can tell what your hands are doing, holding or touching | 11/2016 |
| The Verge , Carnegie Mellon researchers hacked an LG smartwatch to turn it into a gesture device | 11/2016 |
| Digital Trends , Ingenious accelerometer hack could allow existing smartwatches to identify any object that you grab | 11/2016 |
| Fast Company , The Most Innovative Student Design of 2016 | 9/2016 |
| Scientific American , Maker Movement Turns Scientists into Tinkerers | 8/2016 |
| NPR Radio Broadcast (Via WESA 90.5FM), "CMU's SkinTrack Technology Turns Your Forearm Into Smartwatch Trackpad" | 6/2016 |
| MIT Technology Review , "Use Your Arm as a Smart Watch Touch Pad" | 5/2016 |
| The Verge , "New Tech Turns Your Skin into a Touchscreen for your Smartwatch" | 5/2016 |
| Huffington Post , "New Tech Turns Your Arm Skin Into A 'Touchpad'" | 5/2016 |

| | |
|---|---------|
| CNN , “This Watch Turns Your Arm into a Touchscreen” | 5/2016 |
| Newsweek , “Smart Ring Turns Your Skin into a Touchpad for your Smartwatch” | 5/2016 |
| Yahoo! News , “SkinTrack Turns Your Whole forearm into a Smartwatch Interface” | 5/2016 |
| WIRED , “SkinTrack Can Turn Your Skin into a Touchscreen” | 5/2016 |
| TechCrunch , “Want More Screen Space on Your Smartwatch? Put a ring on it...” | 5/2016 |
| The Daily Mail (UK) , “Frustrated with Tiny Smartwatch screens? Gadget Turns the Skin into a Touchpad” | 5/2016 |
| Popular Science , “This Smartwatch Turns Your Skin into a Touch Screen” | 5/2016 |
| Inverse , “Carnegie Mellon Can Turn Your Beautiful Skin into a Vast Smartwatch Trackpad” | 5/2016 |
| Gizmodo , “This New ‘Skinterface’ Could Make Smartwatches Suck Less” | 5/2016 |
| Engadget ,“Navigate your Smartwatch by Touching Your Skin” | 5/2016 |
| Mashable , “Researchers Create Wild Skin-Touch Interface for Tiny Smart Watches” | 5/2016 |
| Maxim , “This Freakishly Futuristic Technology Lets You Use Your Skin as a Touchscreen” | 5/2016 |
| Discovery Channel , “Your Arm Could be the Touchpad” | 5/2016 |
| Phys.org ,“SkinTrack Technology Turns Arm into Smartwatch Touchpad” | 5/2016 |
| Tech Times , “Fingertips Too Big For Your Tiny Smartwatch? SkinTrack Turns Your Forearm Into A Touchpad” | 5/2016 |
| R&D Magazine , “Engineers Create Tool That Turns Skin into Touchpads” | 5/2016 |
| PC Magazine , “‘SkinTrack’ Turns Your Arm Into a Touch Screen” | 5/2016 |
| The Next Web , “SkinTrack Turns Your Skin into a Touch interface for Smartwatches” | 2/2016 |
| R&D Magazine , “SweepSense Pauses Your Music When Earphones are Removed” | 2/2016 |
| MIT Technology Review , “Pause Your Tunes by Taking Out Your Earbuds” | 11/2015 |
| NPR (WESA 90.5 FM, Radio Broadcast), “CMU Technology Syncs Smart Watch User’s Actions With Helpful Apps” | 11/2015 |
| BBC News , Click (TV Programme, Aired Live), “The Smartwatch Gets Serious” | 11/2015 |
| NBC News , “Disney Smartwatch Knows What You’re Touching and Tells You What to Do Next” | 11/2015 |
| CBS (KDKA-FM 93.7 Pittsburgh Radio Interview), “A Smartwatch that Knows What You’re Touching” | 11/2015 |
| Discovery Channel (Canada) Live Broadcast, “Smartwatch Turns Your Body into an Antenna” | 11/2015 |
| Ars Technica , “Disney’s smartwatch prototype can identify and track everything you touch” | 11/2015 |
| Vice Motherboard , “Disney Designed a Smartwatch that Knows What You’re Touching” | 11/2015 |
| WIRED , “EM-Sense Enabled Smartwatch Can Detect When You Touch a Doorknob” | 11/2015 |
| Popular Mechanics , “Disney’s Wild New EMSense Tech Can Identify Any Gadget You Touch” | 11/2015 |
| Discovery News , “Smartwatch Turns Your Body into an Antenna” | 11/2015 |
| Daily Mail (UK), “EM-Sense knows what you’re touching and shows relevant information on its display” | 11/2015 |
| WIRED (UK), “Disney’s concept smartwatch knows what you’re touching” | 11/2015 |
| CNET (Japan), “EMSense identifies the type of electronic device you’re touching” | 11/2015 |
| Gizmodo , “Your Smartwatch Might Soon Know Exactly What You’re Touching” | 11/2015 |
| Fast Company , “This \$10 Hack Could Let Your Apple Watch Sense Everything You Touch” | 11/2015 |
| New Scientist , “No-touch smartwatch scans the skin to see the world around you” | 11/2015 |
| Hacker News (Front Page), “Disney’s EM-Sense Smartwatch, contextually determining what you’re touching” | 11/2015 |
| ACM Tech News , “System Recognizes Objects Touched by User, Enabling Context-Aware Smartwatch Apps” | 11/2015 |
| PSFK , “Disney’s Watch Can Tell What You’re Holding, Opening Up World of Self-Contained Interactivity” | 11/2015 |
| Digital Trends , “Armed with electromagnetic sensors, Disney’s new wearable can tell what you’re touching” | 11/2015 |
| Tech Spot , “This smartwatch uses electromagnetic noise to identify what you’re touching” | 11/2015 |
| Hack A Day , “Disney’s Designing a Smartwatch that Knows What You’re Touching” | 11/2015 |
| Tech Radar , “Disney made a smartwatch that tells you what you’re touching” | 11/2015 |
| Tech Times , “Recognition Software Could Let Smartwatches Enable Context-Aware Apps” | 11/2015 |
| Phys.org , “System recognizes objects touched by user, enabling context-aware smartwatch apps” | 11/2015 |
| TechCrunch , “Researchers Can Now Create 3D-Printed (Plastic) Hair” | 11/2015 |
| Fast Company , “This Delicate Hair Is Artisan-Level 3-D Printing” | 11/2015 |
| Business Insider , “You can now use a 3-D printer to create artificial hair” | 11/2015 |
| Cosmopolitan (UK), “You Can Now 3-D Print Hair” | 11/2015 |
| Marie Claire , “3-D Printers Are Now Making Hair: Is This the Future of Extensions?” | 11/2015 |
| Hack A Day , “Hair Enthusiasts Rejoice! Synthetic Follicles are Now 3D-Printable” | 11/2015 |
| Plastics Today , “Carnegie Mellon fur-bricates plastic hair with low-cost 3D printer” | 11/2015 |
| Pittsburgh Post-Gazette , “CMU researchers develop technique for printing hair strands” | 11/2015 |
| Discovery Channel (Canada) Live Broadcast, “Furbrication” | 10/2015 |
| MIT Technology Review , “You Can Now 3-D Print a Toupee” | 10/2015 |
| New York Magazine , “So Long, Weaves. 3-D Printers Can Now Make Hair” | 10/2015 |
| CBS (Pittsburgh), “Carnegie Mellon Researchers Create ‘Hair’ With 3-D Printer” | 10/2015 |
| NPR (WESA 90.5 FM Radio Broadcast), “Bad Hair Day? Try Printing It Instead” | 10/2015 |
| CNET , “3D-printed hair puts a coiffure on your plastic creations” | 10/2015 |
| Engadget , “3D printing hair is as easy as using a hot glue gun” | 10/2015 |
| Gizmodo , “Sorry, Hair Club—We Can Finally 3D-Print Hair” | 10/2015 |
| Phys.org , “Research team fur-bricates hair with inexpensive 3-D printer” | 10/2015 |
| Tech Times , “Researchers Use Hot Glue Gun Technology to Create 3D-Printed Hair Strand By Strand” | 10/2015 |
| International Business Times , “Sorry, Hair Club—We Can Finally 3D-Print Hair” | 10/2015 |
| CMU Link , “Acoustruments: Adding new functionality to smartphones by harnessing the power of sound” | 7/2015 |
| WIRED , “There’s a Way to Control Phones With Sound, Not Electronics” | 5/2015 |

| | |
|--|---------|
| TechCrunch , “Disney’s Lab Builds Buttons That Work By Manipulating Soundwaves Rather Than Electricity” | 4/2015 |
| IEEE Pervasive Mag , “Acoustruments: Passive, Acoustically-Driven Interactive Controls for Handheld Devices” | 4/2015 |
| Fast Company , “Disney’s Incredible iPhone Accessories Can Hear How You Touch Them” | 4/2015 |
| Gizmodo , “Disney Invented a Way To Control Your Phone Using the Sounds It Emits” | 4/2015 |
| Mashable , “Researchers use sound waves to control iPhones” | 4/2015 |
| Engadget , “Disney’s ‘acoustruments’ can control phones using their own sounds” | 4/2015 |
| PCWorld , “Weird Disney tech lets you play Pied Piper to your smartphone” | 4/2015 |
| GizMag , “Acoustruments could add physical controls to smartphones – using nothing but a plastic tube” | 4/2015 |
| Phys.org , “Beyond the touchscreen: Researchers develop acoustically driven controls for smartphones” | 4/2015 |
| TechSpot , “Disney is using ultrasonic sound-waves to develop next generation smartphone accessories” | 4/2015 |
| Science Daily , “Acoustically driven controls created for smartphones” | 4/2015 |
| CMU News , “Beyond the Touchscreen: CMU, Disney Develop Acoustically Driven Dontrols for Handheld Devices” | 4/2015 |
| WIRED , “Human Smarts Plus AI Could Unlock Computer Vision” | 4/2015 |
| PCWorld , “Zensors app lets you crowdsource live camera monitoring” | 4/2015 |
| Digital Trends , “Zensors app uses your old smartphone and crowdsourcing for smart surveillance” | 4/2015 |
| Gizmodo , “One Old Android Phone Could Make All Your Dumb Things Smart” | 4/2015 |
| Engadget , “Scientists turn old smartphones into all-seeing eyes” | 4/2015 |
| SlashGear , “Zensors wants to make dumb stuff smart in your home” | 4/2015 |
| TechXplore , “Zensors: Making sense with live question feeds” | 4/2015 |
| Gizmodo , “The 7 Most Important UI and UX Ideas of 2014” | 12/2014 |
| New York Times , “In a Small Space, a Big Issue: Researchers Look at Ways to Fit Technology in Confined Spaces” | 11/2014 |
| TechCrunch , “Skin Buttons Are Working Buttons Projected Onto The Skin” | 10/2014 |
| WIRED , “A Smartwatch That Projects Buttons Onto Your Skin” | 10/2014 |
| Fast Company , “This Smartwatch Projects Laser Buttons Onto Your Skin” | 10/2014 |
| New Scientist , Magazine Issue #2991 (UK), “Skin buttons expand smartwatches” | 10/2014 |
| Gizmodo , “7 Experimental Interfaces That Show the Future of UI Design” | 10/2014 |
| Canadian Broadcasting Company (CBC) , “Skin Buttons”, Live Broadcast | 10/2014 |
| Geek.com , “This smartwatch makes your arm a touchscreen” | 10/2014 |
| CHIP Magazine (Germany) , “Skin Buttons: Smartwatch beamt Bedienknöpfe direkt auf die Haut” | 10/2014 |
| Phys.org , “Skin icons can tap into promise of smartwatch” | 10/2014 |
| NFC World , “Researchers show off ‘skin buttons’ for smartwatches” | 10/2014 |
| Tencent News (China) , “腾讯新闻: 智能表屏幕不够用? 手月宛来凑” | 10/2014 |
| Anthill Magazine (Australia) , “Skin buttons will turn your wrist into an interactive device” | 10/2014 |
| NEXT Pittsburgh , “How Apple botched the watch and why Skin Buttons will be better” | 9/2014 |
| IEEE Spectrum , “Wearable Computers Will Transform Language” | 5/2014 |
| WIRED , “Hardware Whizzes Solve a Big Smartwatch Problem: Your Fat Fingers” | 5/2014 |
| MIT Technology Review , “A Smart Watch Controlled by Twists, Tilts, and Clicks” | 5/2014 |
| Daily Mail (UK) , “Time to play! The twistable smartwatch that doubles up as a JOYSTICK” | 5/2014 |
| The Economic Times (India) , “How a joystick could iron out kinks in smartwatches” | 5/2014 |
| ACM TechNews , “Researchers Try New ‘Twist’ on Smartwatches” | 5/2014 |
| Veeoz , “Researchers try a new ‘twist’ on smartwatch control” | 5/2014 |
| New Scientist , “Tilting smartwatch cuts need for fiddly screen-jabbing” | 4/2014 |
| Gizmodo , “A Joystick-Inspired Interface Could Solve Smartwatches’ Biggest Problem” | 4/2014 |
| Engadget , “Concept smartwatch uses the whole screen as a joystick” | 4/2014 |
| Hacker News (Front Page) , “Joystick-like Input Method for Smartwatches” | 4/2014 |
| PCWorld , “Researchers try a new ‘twist’ on smartwatch control” | 4/2014 |
| Electronics Weekly , “Motion sensors serve tilting smartwatch” | 4/2014 |
| Geek.com , “Smartwatch interface problem solved with six degrees of mechanical freedom” | 4/2014 |
| Red Orbit , “New Research Adds a ‘Twist’ To Smartwatch Innovation” | 4/2014 |
| Network World , “Researchers try new ‘twist’ on smartwatches” | 4/2014 |
| Kotaku , “Smartwatch Concept Brings DOOM To Your Wrist” | 4/2014 |
| Adobe.com Leaders: Breakthrough Innovation , “Tell an Image What to Do” | 4/2013 |
| SunStar (Philippines) , “Cebuano student leads team behind voice-controlled photo editing app” | 3/2013 |
| Pestaola (Greece) , “PixelTone app, το μέλλον της Apple και της Ελλάδας είναι multimodal” | 2/2013 |
| Tech Genius (Italy) , “Adobe sta sviluppando un Photoshop a comandi vocali?” | 2/2013 |
| PCWorld (Bulgaria) , “Скоро може да се появи графичен редактор с гласово и жестово управление” | 2/2013 |
| Pop Photo , “PixelTone: A Voice Controlled Photo Editing App for iPad” | 2/2013 |
| Xataka , “Sácame más delgado en esta foto” así es el retoque de imágenes de PixelTone” | 2/2013 |
| SoftZone (Spain) , “Adobe crea PixelTone, un programa para editar fotografías con la voz” | 2/2013 |
| Tec Mundo (Brazil) , “Adobe desenvolve editor de fotos que pode ser comandado por voz” | 2/2013 |
| Tom’s Guide (France) , “Adobe travaille sur une application de retouche photo à la voix” | 2/2013 |
| PetaPixel , “PixelTone: A Futuristic Image Editor That Lets You ‘Shop Photos Using Your Voice” | 2/2013 |
| Discovery Channel , Featured on the Daily Planet’s digit@l Segment | 2/2013 |
| Gizmodo , “Adobe’s Developing a Brilliant Photo Editing App You Can Just Talk To” | 2/2013 |
| NBC , “Voice-controlled photo app PixelTone: Shades of ‘Blade Runner’” | 2/2013 |

Plus several more selected press coverage.

PATENTS ISSUED AND PENDING

Note: Patent author order is arbitrary and has no legal bearing.

- [16] Laput, G., Zhang Y., Harrison, C. 2016. Synthetic Sensors: System and Method Towards General-Purpose Sensing. U.S. Patent App. Filed September 2016.
- [15] Zhang Y., Laput, G., Harrison, C. 2016. Electrck: Low-Cost Touch Sensing for Large, Irregular, Rapidly-Prototyped Objects. U.S. Patent App. Filed September 2016.
- [14] Laput G., Xiao, R., Harrison, C. 2016. EMPower: Instant and Effortless Summoning of Rich Contextual Applications for Interface-Poor Smart Devices. U.S. Patent App. Filed April 2016.
- [13] Laput G., Xiao, R., Harrison, C. 2016. System and Method for High-Fidelity Bio-Acoustic Sensing for Wearable Devices. U.S. Patent Application Filed April 2016.
- [12] Laput G., Harrison C. 2016. Generalized Machine Learning and Signal Processing Pipeline for Time-Series Sensor Streams. U.S. Patent Application Filed April 2016.
- [11] Laput, G., Xiao, R., Harrison, C. 2016. A system for Enabling Rich Contextual Applications for Interface-Poor Smart Devices. U.S. Patent Application Filed April 2016.
- [10] Laput, G., Yang, C., Xiao, R., Sample, A., Harrison, C. 2015. Automatic Object Detection and State Estimation via Electronic Emissions Sensing. U.S. Patent Application Filed Oct. '15. US Patent Application Number 14/925,697. **Patent Issued.**
- [9] Laput, G., Chen, X.A., Harrison, C. 2015. Fused Deposition Modeling of Strands, Fibers and Bristles. U.S. Patent Application Filed on Oct. '15.
- [8] Yang, Z., Zhou, J., Laput, G., Harrison, C. Wearable Sensors for Continuous Finger Tracking on the Skin. U.S. Patent Application Filed Oct. '15.
- [7] Laput, G., Lasecki W., Weise, J.W., Xiao, R., Bigham, J., Harrison, C. 2015. Zensors: Adaptive, Rapidly-Deployable, Human-Intelligent Sensor Feeds. U.S. Patent Application filed April 2015.
- [6] Laput, G., Harrison, C., Hudson, S.E., Xiao, R., Chen, X.A. 2014. Cheap, Small, Low-Powered, Clickable Fixed-Icon Laser Projections. U.S. Patent Application 61/997,743 filed July 2014.
- [5] Harrison, C., Hudson, S.E., Xiao, R., Laput, G. 2014. Expanding the Input Expressivity of Smartwatches with Mechanical Pant, Tilt, Twist, and Click. U.S. Patent Application 61/995,579 filed April 2014.
- [4] Wilensky, G., Chang, W., Dontcheva, M., Laput, G., Agarwala, A. 2012. Natural Language Image Editing. U.S. Patent 13/683,278 filed Nov 21, '12. **Patent Issued**
- [3] Wilensky, G., Chang, W., Dontcheva, M., Laput, G., Agarwala, A. 2012. Natural Language And User Interface Controls. U.S. Patent Application 13/683,341 filed Nov 21, 2012. **Patent Issued.**
- [2] Wilensky, G., Chang, W., Dontcheva, M., Laput, G., Agarwala, A. 2012. Natural Language Image Spatial and Tonal Localization. U.S. Patent Application 13/683,416 filed Nov 21, 2012. **Patent Issued.**
- [1] Wilensky, G., Chang, W., Dontcheva, M., Laput, G., Agarwala, A. 2012. Natural Language Image Tags. U.S. Patent 13/683,466 filed Nov 21, 2012. **Patent Issued.**

MISCELLANEOUS

Drummer, Disney Research (From Ottis Redding to Johnny Cash, to Adele and the Foo Fighters) 2014 - 2018
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 803.9 miles of running (and counting)
FitBit (Walking) — Average 15K steps per day. Logged 5,000+ Lifetime miles (and counting)
Apple Watch (Swimming) — Logged 18,450+ Yards (and counting)

REFERENCES

Mentors and collaborators who have written references for me:

Chris Harrison (Assistant Professor, School of Computer Science, HCII, Carnegie Mellon University)
Scott E. Hudson (Professor, School of Computer Science, HCII, Carnegie Mellon University)
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)
Alex Olwal (Senior Research Scientist, Google)
Ken Hinckley (Principal Research Scientist, Microsoft Research)