

GIERAD LAPUT

Carnegie Mellon University
Human-Computer Interaction Institute
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Overview: My research in HCI lies at the intersection of interactive systems, sensing, and applied machine learning. I design, build, and evaluate novel interactive technologies that greatly enhance input expressivity for users and contextual awareness for devices. These often lie in application-driven domains such as ubiquitous and wearable computing, smart environments, and the Internet of Things (IoT).

EDUCATION

Carnegie Mellon University, School of Computer Science
ABD, 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 in Human-Computer Interaction
Swartz Innovation Fellowship, \$100K Towards Entrepreneurship
McGinnis Venture Capital Award
Fast Company Innovation by Design Award
Best Paper Award, ACM UIST 2016
Best Talk Award, ACM UIST 2016
Best Paper Award, ACM CHI 2015
Best Talk Award, ACM UIST 2015
Adobe Research Fellowship
Qualcomm Innovation Fellowship
Yahoo! InMind Fellowship
Disney Research Fellowship

2018
2018
2018
2017
2016
2016
2015
2015
2016
2014
2014
2013

PEER-REVIEWED PUBLICATIONS

An additional **three** papers are currently in the review cycle.

- [28] **Laput, G.**, Harrison, C. 2019. SurfaceSight: A New Spin on Touch, User, and Object Sensing for IoT Experiences. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Glasgow, Scotland, May 4 - 9, 2019). CHI '19. ACM, New York, NY.
- [27] **Laput, G.**, Harrison, C. 2019. Investigating Fine-Grained Hand Activities Using Commodity Smartwatches. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Glasgow, Scotland, May 4 - 9, 2019). CHI '19. ACM, New York, NY.

- [26] Markvicka, E., Wang, G., Lee, Y., **Laput, G.**, Majidi, C., Yao, L. 2019. ElectroDermis: Fully Untethered, Stretchable, and Highly-Customizable Electronic Bandages. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Glasgow, Scotland, May 4 - 9, 2019). CHI '19. ACM, New York, NY.
- [25] Zhang, Y., Pahud, M., Holz, C., Xia, H., **Laput, G.**, McGuffin, M., Tu, X., Mittereder, A., Su, F., Buxton, W., Hinckley, K. 2019. Sensing Posture-Aware Pen+Touch Interaction on Tablets. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems* (Glasgow, Scotland, May 4 - 9, 2019). CHI '19. ACM, New York, NY.
- [24] **Laput, G.**, Ahuja, K., Goel, M., Harrison, C. 2018. Ubicoustics: Plug-and-Play Acoustic Activity Recognition. In *Proceedings of the 31st Annual ACM symposium on user interface software and technology* (Berlin, Germany, October 14 - 17, 2018). UIST '18. ACM, New York. 213 - 224.
- [23] Zhang, Y., **Laput, G.**, Harrison, C. 2018. Vibrosight: Long-Range Vibrometry for Activity Detection. In *Proceedings of the 31st Annual ACM symposium on user interface software and technology* (Berlin, Germany, October 14 - 17, 2018). UIST '18. 225 - 236. **Best Paper Nomination.**
- [22] Carrington, P., **Laput, G.**, Bigham, J.P. 2018. Exploring Data Tracking and Sharing Preferences of Wheelchair Athletes. In *Proceedings of the ACM annual conference on Computers and Accessibility* (Galway, Ireland, October 22 - 24, 2018). ASSETS '18. ACM, New York, NY. 242 - 248. **Best Paper Nomination.**
- [21] Guo, A., Jain, A., **Laput, G.**, Harrison, C., Bigham, J.P. 2018. Crowd-AI Camera Sensing in the Real World. In *Proceedings of the ACM Journal on Interactive, Mobile, Wearable, and Ubiquitous Technologies* (Singapore, October 8 - 12, 2018). UbiComp '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 Finalist.**
- [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. 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 User Interface. and Soft. Techn.* (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. 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.
- [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 *Proc. CHI '14* (Toronto, Canada, April 26 - May 1, 2014). 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 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.

SELECTED WORKSHOPS AND DEMOS

- [6] Yeo, H.S., **Laput, G.**, Gillian, N., Quigley, A. 2017. Workshop on Object Recognition for Input and Mobile Interaction. In *Proceedings of the 19th International Conference on Human-Computer Interaction with Mobile Devices and Services* (Vienna, Austria, September 4 - 7, 2017). MobileHCI '17 Workshop.
- [5] **Laput, G.**, Zhang, Y., Harrison, C. 2017. Synthetic Sensors: Towards General-Purpose Sensing. In *Proceedings of the 2017 ACM annual conference on Human Factors in Computing Systems* (Denver, Colorado, May 6 - 11, 2017). CHI '17 Demos.
- [4] Gleason C., Guo, A., **Laput, G.**, Kitani, K., Bigham, J.P.. 2016. VizMap: Accessible Visual Information Through Crowdsourced Map Reconstruction In Proceedings of the 18th International ACM SIGACCESS Conference on Computers and Accessibility. ASSETS '17 Workshop.
- [3] **Laput, G.**, Yang, C., Xiao, R., Sample, A., Harrison, C. 2015. EM-Sense: Touch Recognition of Uninstrumented, Electrical and Electromechanical Objects. In *Proceedings of User Interface. and Soft. Techn.* (Charlotte, North Carolina, November 8 - 11, 2015). UIST '15 Demos.
- [2] **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 Demos.
- [1] **Laput, G.**, Brockmeyer, E., Hudson, S.E., Harrison, C. 2015. Acoustruments: Passive, Acoustically-Driven, Interactive Controls for Handheld Devices. In *Proceedings of SIGGRAPH EMerging Technologies* (Los Angeles, CA, August 9 - 13, 2015). SIGGRAPH EmTech '15.

SELECTED INVITED PRESENTATIONS

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| Apple Turi Research (Seattle, WA) <i>Making Ubiquitous Contextual Sensing More Practical</i> | Jan 2019 |
| Apple (Cupertino, CA) <i>Making Ubiquitous Contextual Sensing More Practical</i> | Oct 2018 |
| American Express User Experience and AI Group (New York, NY) <i>Making Ubiquitous Contextual Sensing More Practical</i> | Oct 2018 |
| Adobe Research , Creative Technologies Group (Seattle, WA) <i>Making Ubiquitous Contextual Sensing More Practical</i> | Jun 2018 |
| 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 |
| McGinnis Venture Capital Competition , Tepper School of Business (Pittsburgh, PA) <i>Sensors: Sensing Unleashed</i> | Apr 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 (Pittsburgh, PA) <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>Workshop on Rapid Prototyping Tools</i> | Feb 2013 |

EMPLOYMENT EXPERIENCE

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| Carnegie Mellon University , 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 - Present |
| Apple <i>Exploratory Design Group (XDG)</i> Project scope undisclosed at the moment. | Oct 2018- Present |
| Microsoft Research <i>Research Intern</i> . Natural Interactions Group. Supervisors: Ken Hinckley, Bill Buxton. Project scope undisclosed at the moment. | Jun 2017 |
| Google Research <i>Research Intern</i> . Collaborators: Alex Kauffman (Advanced Interaction Research), Murphy Stein (Daydream), Emre Karagozler (ATAP), Ivan Poupyrev (ATAP). Novel sensing and haptics. | Jun 2015 |
| Disney Research / Walt Disney Imagineering <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 |
| University of Washington , 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 |
| Adobe Research <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 | Aug 2009 |

ACADEMIC SERVICE

Editor-in-Chief, ACM XRDS Magazine
Program Committee, Co-Chair, ACM UIST 2019 Demos
Program Committee, Associate Chair (AC), ACM UIST 2019 Papers and Notes
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 UIST 2018 Session on Sensing at the Small Scale
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 '18, IEEE Potentials '16, TEI '16 '17, ACM Automotive UI '17, NordiCHI '18

TEACHING EXPERIENCE

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| 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 |

STUDENTS MENTORED

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|---|------|
| Evi Bernitsas , Undergraduate, CMU Computer Science (Now at Apple) | 2018 |
| Richard Kang , Masters, Computational Design (Currently at CMU) | 2018 |
| Jason Wu , Ph.D., Human-Computer Interaction (Currently at CMU) | 2018 |
| Karan Ahuja , Ph.D., Human-Computer Interaction (Currently at CMU) | 2017 |
| Saiganesh Swaminathan , Ph.D., Human-Computer Interaction (Currently at CMU) | 2017 |
| Liang He , Masters, Tangible Interaction (Currently Ph.D. at University of Washington) | 2016 |
| Yang Zhang , Masters, Tangible Interaction (Currently Ph.D. at CMU) | 2015 |
| Ishan Chatterjee , Undergraduate, Harvard Electrical Engineering (Now at Microsoft) | 2014 |

SELECTED PRESS COVERAGE

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|---|---------|
| TechCrunch , This Robot Uses Lasers to ‘Listen’ to the Environment | 10/2018 |
| The Register (UK) , Alexa heard what you did last summer– AI Recognizes Activities from Sound | 10/2018 |
| Science Daily , Sound, Vibration Recognition Boost Context-Aware Computing | 10/2018 |
| Futurity , Sound and Vibrations Let Smart Devices Know Where They Are | 10/2018 |
| R&D Magazine , New Techniques Help Smart Devices Detect What’s Happening | 10/2018 |
| Google AI Blog , Announcing the 2018 Google PhD Fellows for North America, Europe and the Middle East | 4/2018 |
| Pittsburgh Business Times , AI Startup wins McGinnis Venture Competition | 4/2018 |
| Bloomberg Tech 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 |

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| 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 'Electricr' | 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 | 9/2016 |
| Fast Company , The Most Innovative Student Design of 2016 | 8/2016 |
| Scientific American , Maker Movement Turns Scientists into Tinkerers | 6/2016 |
| NPR Radio Broadcast (Via WESA 90.5FM), "CMU's SkinTrack Technology Turns Your Forearm Into Smartwatch Trackpad" | 5/2016 |
| 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 |
| R&D Magazine , "SweepSense Pauses Your Music When Earphones are Removed" | 5/2016 |
| MIT Technology Review , "Pause Your Tunes by Taking Out Your Earbuds" | 2/2016 |
| NPR (WESA 90.5 FM, Radio Broadcast), "CMU Technology Syncs Smart Watch User's Actions With Helpful Apps" | 2/2016 |
| 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 |
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MISCELLANEOUS

Drummer, Disney Research Band (From Ottis Redding to Johnny Cash, to Adele and the Foo Fighters) 2014 - 2018

Running (Logged on Nike+) — 1000+ miles of running (and counting)

Steps (Logged on FitBit and Apple Watch) — Average 15K steps per day. Logged 9,000+ Lifetime miles (and counting)

Swimming (Logged on Apple Watch) — 18,450+ Yards (and counting)

Languages — Cebuano (Fluent), Tagalog (Fluent), English (Fluent)

REFERENCES

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