YANG ZHANG

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Research Interests

I build interfaces which bridge the gaps between computing resources and people's daily lives in a natural and efficient way. My research interests fall into the research fields of sensing technology, wearables, and fabrications.

Education

Carnegie Mellon University, School of Computer Science — Pittsburgh, PA
2nd Year Ph.D., in Human-Computer Interaction Institute *Advisor: Chris Harrison* — Aug 2015 -

Carnegie Mellon University, School of Architecture — Pittsburgh, PA
Master of Science in Computational Design — Aug 2013 - May 2015

Beihang University, School of Automation Science and Electronic Engineering — Beijing, China
Bachelor of Engineering in Electronic Engineering — Aug 2009 - May 2013

Academic Honor and Awards

Best Paper Nomination at CHI 2016, San Jose, CA, USA — Top 4%
Best Talk at CHI 2016, San Jose, CA, USA — Top 1%
Best Note Award at ITS 2015, Madeira, Portugal — Top 5%
Best Talk Nomination at UIST 2015, Charlotte, NC, USA — Top 4%
1st Most Creative Award at UIST 2014 Student Innovation Contest, Honolulu, HI — Top 3%

Publication

CHI 2017 (To appear at the 35th Annual ACM Conference on Human Factors in Computing Systems)
Zhang, Y., Laput, G., and Harrison, C. "Electrick: Low-Cost Touch Sensing for Large, Irregular and Rapidly-Prototyped Objects", Denver, CO, USA

CHI 2017 (To appear at the 35th Annual ACM Conference on Human Factors in Computing Systems)
Laput, G., **Zhang, Y**., and Harrison, C. "Synthetic Sensors: Exploring the Versatility, Accuracy, and Functional Utility of General-Purpose Sensing", Denver, CO, USA

CHI 2017 (To appear at the 35th Annual ACM Conference on Human Factors in Computing Systems)
Xiao, R., Laput, G., **Zhang, Y**., and Harrison, C. "Deus EM Machina: On-Touch Contextual Functionality for Smart IoT Appliances", Denver, CO, USA

UIST 2016 (the 29th annual ACM Symposium on User Interface Software and Technology)
Zhang, Y., Xiao, R. and Harrison, C. "Advancing Hand Gesture Recognition with High Resolution Electrical Impedance Tomography", Tokyo, Japan

UIST 2016 (the 29th annual ACM Symposium on User Interface Software and Technology)
Zhou, J., **Zhang, Y.**, Laput, G. and Harrison, C. "AuraSense: Enabling Expressive Around-Smartwatch Interactions with Electric Field Sensing", Tokyo, Japan

CHI 2016 (the 34th Annual ACM Conference on Human Factors in Computing Systems) ***Best Paper Nomination***
Zhang, Y., Zhou, J., Laput, G. and Harrison, C. "SkinTrack: Using Body as an Electrical Waveguide for Continuous Tracking on the Skin", San Jose, CA, USA

ITS 2015 (the 10th annual ACM Symposium on Interactive Tabletops and Surfaces) ***Best Note***
Zhang, Y. and Harrison, C. "Quantifying the Targeting Performance Benefit of Electrostatic Haptic Feedback on Touchscreens", Madeira, Portugal

UIST 2015 (the 28th annual ACM Symposium on User Interface Software and Technology) ***Best Talk Nomination***
Zhang, Y. and Harrison, C. "Tomo: Wearable, Low-Cost Electrical Impedance Tomography for Hand Gesture Recognition", Charlotte, NC, USA

IDC 2013 (the 12th annual ACM International Conference on Interaction Design and Children)
Wang, D.L., Qi, Y.F., **Zhang, Y**. and Wang, T.T. "TanPro-Kit: A Tangible Programming Tool for Children", New York City, NY, USA

UIST 2012 (the 25th annual ACM Symposium on User Interface Software and Technology)
Wang, D.L., **Zhang, Y**., Gu, T.Y., He, L., and Wang, H.A. "E-Block: A Tangible Programming Tool for Children", Cambridge, MA, USA

UbiComp 2012 (the 13th annual ACM Conference on Ubiquitous Computing)
He, L., Li, G., **Zhang, Y**., Wang, D.L., and Wang, H.A. "TempoString: A Tangible Tool for Children's Music Creation", Pittsburgh, PA, USA

Research Experience

Carnegie Mellon University, Human-Computer Interaction Institute — Pittsburgh, PA
*Graduate Student Researcher. **Advised by** Prof. Chris Harrison* — Aug 2014 - Present
Researching on novel interfaces for smartwatches and haptic feedback
- Developed touch tracking techniques for fabricated objects in HCI
- Developed novel sensing technology for smartwatches
- Evaluating targeting performance benefit of electrostatic feedback on touchscreens

Institute of Software Chinese Academy of Sciences, HCI Lab — Beijing, China
*Intern Researcher. **Advised by** Prof. Danli Wang* — Apr 2012 - Nov 2013
Developed educational software for children's early computer education
- Adopted computer vision, sensors and wireless technology to develop tangible tools for children to learn programming
- Conducted user studies of children aged from 5 to 9 focusing on their learning process by videotaped analysis, structured interview and questionnaires

Professional Experience

Marvell Semiconductor, Kinoma software group — Santa Clara, CA
*Intern Engineer. **Advised by** Dr. Andy Carle* — May 2014 - Aug 2014
Developed applications for Kinoma Create, the next generation IoT construction kit
- Built a light installation which visualizes the global tweet stream in real-time based on geographical and traffic load information
- Worked with UART, I2C communication of the microcontrollers and Oauth1.0 and web socket of the web services
- Improved user experience for Kinoma Create and tested core library functions

Skills

Programming: C, C++, Java, Python
Tools: TensorFlow, Eagle, Matlab, Weka, AWS APIs, IOS and Android SDK, Arduino, openFrameworks, Processing
Fabrication: Welding, 3D Printing, Laser Cutting, CNC Routing, Milling, Vacuum Forming, Molding