YANG ZHANG

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Research Interests

Combining sensing technologies and machine learning to make interfaces more fluid and expressive, including tangible interfaces, wearable technology, ubiquitous computing, and sensing technology.

Education

Carnegie Mellon University, School of Computer Science — Pittsburgh, PA
1st 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

Honor and Awards

Best Paper Nomination in CHI 2016, San Jose, CA, USA	Top 4%
Best Note Award in ITS 2015, Madeira, Portugal	Top 5%
Best Talk Nomination in UIST 2015, Charlotte, NC, USA	Top 4%
1st Most Creative Award in UIST 2014 Student Innovation Contest, Honolulu, HI	Top 3%
1st prize of 1st Annual Internet of Things World Hackathon 2014, San Francisco, CA	Top 5%
Meritorious winner of Interdisciplinary Contest in Modeling 2012, COMAP	Top 10%
1st scholarship for outstanding performance in science and technology competitions at BUAA	Top 10%

Publication

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 novel sensing technology for smartwatches
- Evaluating targeting performance benefit of electrostatic feedback on touchscreens
- Explored on mapping texture data recorded from real-world materials with tactile feedback recreated by the electrostatic force

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

Project Experience

Carnegie Mellon University, School of Computer Science — Pittsburgh, PA
Created a RESTful OLAP system for tweet data based on Amazon Web Services — Aug 2014 - Dec 2014

- Designed and implemented MySQL backend system using reverse proxy protocol with price friendly load balance tuning
- Parsed 1TB tweet data by Elastic Map Reduce ETL (extract, transform, load)

Built a real-time Wikipedia data analysis system — Aug 2014 - Dec 2014

- Designed and implemented a custom API for Wikipedia articles browsing analytics
- Developed a user-friendly IOS app to refresh the top 10 most popular articles of Wikipedia in real-time

Carnegie Mellon University, School of Architecture — Pittsburgh, PA
Developed interactive installations and demos — Aug 2013 - May 2014

- Developed an interactive projected drawing of traditional Chinese water color style fish based on Kinect, OpenGL and OpenMP
- Developed a wearable sensor and projector system which can project an animation representing the carrier's heartbeat

Beihang University, School of Automation Science and Electronic Engineering — Beijing, China
Developed smart sensing and control techniques — Aug 2011 - May 2013

- Designed an algorithm to simulate people's visual attention for robots
- Built a smart remote control system for indoor lighting
- Designed an algorithm to detect falls and built a wearable sensor for senior citizens

Skills

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