

# Teng Han (韩腾)

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## Research Interests

Human Computer Interaction (HCI), in the areas of innovative input and output methodologies, computer aided creative tools, and mobile interfaces and pedagogical systems.

Wearable technology appears prominently in recent years with popularization of smartwatch and activity tracker. For my PhD degree, I have been exploring input and output modalities for smartwears that are derived from users' daily activities and common knowledge. The goal is to help bridging the gap between novel smartwear interactions and real-life experiences shared among users. Specifically, I conduct projects to transform daily activities into input mechanisms, complement device output in response to users' actions, and explore interaction paradigms on miniature sized touchscreens. My research methods involve empirical user studies to improve understanding of human factors that are associated with proposed systems, implementation of hardware and software prototypes to provide compelling experiences, and user interface design.

## Education

Feb 2015 – 2018 (expected)	<b>PhD Student   University of Manitoba, Canada</b> HCI Lab Supervisor: Prof. Pourang Irani
Sep 2009 – July 2012	<b>Master of Science by Research   University of Bristol, UK</b> Interaction and Graphics Group Supervisor: Prof. Sriram Subramanian Thesis Title: Kicking Gestures for Mobile Interaction
Sep 2005 – Jul 2009	<b>Bachelor of Engineering   Xi'an Jiaotong University, China</b> Department of Industrial Design Supervisor: Prof. Leshan Li Thesis Title: Design of China Phone for the Youth

## Experiences in TA and Marker

16 Summer	<b>Instructor   University of Manitoba, Canada</b> COMP 1010, Introductory Computer Science
15 Fall	<b>Marker   University of Manitoba, Canada</b> COMP 3020, Human Computer Interaction 1

## Employments and Internship

Jan 2018 – April 2018	<b>Research Intern   Autodesk Research, Canada</b> Mentors: Dr. Tovi Grossman and Dr. Fraser Anderson
May 2017 – Dec 2017	<b>Research Intern   Honda Research Institute, Japan</b> Mentors: Dr. Keisuke Nakamura and Dr. Randy Gomez
Jan 2017 – Mar 2017	<b>Visiting Student   Dartmouth College, USA</b>

Mentor: Dr. Xing-Dong Yang

Jul 2014 – Nov 2014    **Algorithm Engineer | Zepp Labs, China**  
Manager: Dr. Xiaowei Dai

Jan 2014 – Jun 2014    **Intern | Lenovo Research, China**  
Mentor: Dr. Xiang Cao

May 2013 - Dec 2013    **Research Assistant | University of Pittsburgh, USA**  
Supervisor: Dr. Jingtao Wang

Oct 2011 – May 2012    **Research Intern | Microsoft Research Asia, China**  
Mentor: Dr. Xiang Cao

## Publications

google scholar: <https://scholar.google.co.jp/citations?user=kHKwO9gAAAAJ&hl=en&oi=ao>

dblp: <http://dblp.uni-trier.de/pers/hd/h/Han:Teng>

## **Journal**

[J1] Jessica R. Cauchard, Mike Fraser, Teng Han, and Sriram Subramanian. 2012. Steerable projection: exploring alignment in interactive mobile displays. *Personal Ubiquitous Comput.* 16, 1 (January 2012), 27-37.

## **Conferences**

[C1] Teng Han, Jiannan Li, Khalad Hasan, Keisuke Nakamura, Randy Gomez, Ravin Balakrishnan, and Pourang Irani. 2018. PageFlip: Leveraging Page-Flipping Gestures for Efficient Command and Value Selection on Smartwatches. In *Proceedings of the 36th Annual ACM Conference on Human Factors in Computing Systems (CHI '18)*. ACM. (Top conference in HCI, CCF-A) (In press)

[C2] Teng Han, Xiang Xiao, Lanfei Shi, John Canny, and Jingtao Wang. 2015. Balancing Accuracy and Fun: Designing Camera Based Mobile Games for Implicit Heart Rate Monitoring. In *Proceedings of the 33rd Annual ACM Conference on Human Factors in Computing Systems (CHI '15)*. ACM, New York, NY, USA, 847-856. (Top conference in HCI, CCF-A)

[C3] Teng Han, Qian Han, Michelle Annett, Fraser Anderson, Da-Yuan Huang, and Xing-Dong Yang. Frictio: Passive Kinesthetic Force Feedback for Smart Ring Output. In *Proceedings of the 30th annual ACM symposium on User interface software and technology (UIST '17)*. ACM, New York, NY, USA, 131-142. (Top Conference in HCI, CCF-B)

[C4] Teng Han, Khalad Hasan, Keisuke Nakamura, Randy Gomez, and Pourang Irani. 2017. SoundCraft: Enabling Spatial Interactions on Smartwatches using Hand Generated Acoustics. In *Proceedings of the 30th annual ACM symposium on User interface software and technology (UIST '17)*. ACM, New York, NY, USA, 579-591. (Top Conference in HCI, CCF-B)

[C5] Jason Alexander, Teng Han, William Judd, Pourang Irani, and Sriram Subramanian. 2012. Putting your best foot forward: investigating real-world mappings for foot-based gestures. In *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '12)*. ACM, New York, NY, USA, 1229-1238. (Top conference in HCI, CCF-A)

[C6] Yupeng Zhang, Teng Han, Zhimin Ren, Nobuyuki Umetani, Xin Tong, Yang Liu, Takaaki Shiratori, and Xiang Cao. 2013. BodyAvatar: creating freeform 3D avatars using first-person body gestures. In *Proceedings of the 26th annual ACM symposium on User interface software and technology (UIST '13)*. ACM, New York, NY, USA, 387-396. (Top conference in HCI, CCF-B)

[C7] [Teng Han](#), Jason Alexander, Abhijit Karnik, Pourang Irani, and Sriram Subramanian. 2011. Kick: investigating the use of kick gestures for mobile interactions. In *Proceedings of the 13th International Conference on Human Computer Interaction with Mobile Devices and Services (MobileHCI '11)*. ACM, New York, NY, USA, 29-32.

(2nd tire conference in HCI, CCF-B)

[C8] William Delamare, [Teng Han](#), and Pourang Irani. 2017. Designing a gaze gesture guiding system. In *Proceedings of the 19th International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI '17)*. ACM, New York, NY, USA, Article 26, 13 pages.

(2nd tire conference in HCI, CCF-B)

[C9] Xiang Xiao, [Teng Han](#), and Jingtao Wang. 2013. LensGesture: augmenting mobile interactions with back-of-device finger gestures. In *Proceedings of the 15th ACM on International conference on multimodal interaction (ICMI '13)*. ACM, New York, NY, USA, 287-294.

[C10] Barrett Ens, Ahmad Byagowi, [Teng Han](#), Juan David Hincapié-Ramos, and Pourang Irani. 2016. Combining Ring Input with Hand Tracking for Precise, Natural Interaction with Spatial Analytic Interfaces. In *Proceedings of the 2016 Symposium on Spatial User Interaction (SUI '16)*. ACM, New York, NY, USA, 99-102.

(Best short paper award)

[C11] [Teng Han](#), David Ahlström, Xing-Dong Yang, Ahmad Byagowi, and Pourang Irani. 2016. Exploring Design Factors for Transforming Passive Vibration Signals into Smartwear Interactions. In *Proceedings of the 9th Nordic Conference on Human-Computer Interaction (NordiCHI '16)*. ACM, New York, NY, USA, Article 35, 10 pages.

### **Work-In-Progress, Posters**

[WIP1] [Teng Han](#), Lanfei Shi, Xiang Xiao, John Canny, and Jingtao Wang. 2014. Designing engaging camera based mobile games for implicit heart rate monitoring. In *CHI '14 Extended Abstracts on Human Factors in Computing Systems (CHI EA '14)*. ACM, New York, NY, USA, 1675-1680.

### **Patent**

[US Patent App. 14/770,800, 2013] Xiang Cao, Yang Liu, [Teng Han](#), Takaaki Shiratori, Nobuyuki Umetani, Yupeng Zhang, Xin Tong, Zhimin Ren. Object Creation Using Body Gestures.

### **Skillsets**

*Programming & Platform* | C++, C#, Java, Python | Desktop and Android Applications | Arduino etc. | Vision and graphics tools e.g. OpenCV, OpenGL | Machine learning tools e.g. Weka | Signal Processing tools e.g. Matlab.

*Study & Data Analysis* | T-Test, Anova | Practical with user study, e.g. brainstorming, in-depth interview, questionnaire.

*Design* | Visualization, UI design and prototype modeling with Processing, Photoshop, CorelDraw, Rhino, Pro/E.

### **Awards and Honors**

2016-17	PhD sponsored by Honda Research Institute Japan
2014	1st place in the Pitt CS Day (2014) digital media competition
2013	1st place in the Pitt CS Day (2013) digital media competition & runner up in the poster competition
2012 - 13	GSR Fellowship, Intelligent Systems Program, PITT

2008	Third-class academic excellence scholarship, XJTU
2008	Second Prize for the 3rd National College Mechanical Design Competition (provincial), Xi'an, China
2007	Third-class CASC excellence scholarship, XJTU
2006	Second-class academic excellence scholarship, XJTU
2006	Freshmen scholarship, XJTU

## Activities and Services

Invited Talks	Dec, 2017   Institute of Software, Chinese Academy of Sciences Nov, 2017   Department of Computer Science, University of Tokyo Nov, 2017   Media Interaction Group, AIST
External Reviewer	IJHCS, ACM CHI '14-18, ACM MobileHCI '12, 15, ACM ISS '17, IEEE THMS, IEEE VR '18, TEI '16-18
Co-chair	ChineseCHI'18 Poster Session
Others	Student Volunteer   UIST 2017, Québec City, Canada  Demo   Mobile VCE Annual Research Review 2010, London, UK  Assistant   UPA CHINA Seminar 2009, Beijing, China  Project team leader   the 3rd National College Mechanical Design Competition (provincial) 2008, Xi'an, China
Hobbies	Basketball, Cinema

## References

Dr. Xing-Dong Yang	Assistant Professor at Dartmouth College, USA xing-dong.yang [at] dartmouth.edu
Dr. Xiang Cao	Founder and CEO of Xiaoxiaoni Creative, China Former Senior Manager at Lenovo Research, Beijing Former Researcher at Microsoft Research Asia xiangcao [at] acm.org
Dr. Jingtao Wang	Assistant Professor at University of Pittsburgh, USA Jingtaow [at] cs.pitt.edu
Dr. Sriram Subramanian	Professor at University of Sussex, UK Co-founder of UltraHaptics, UK Former Professor at University of Bristol, UK sriram [at] sussex.ac.uk
Dr. Pourang Irani	Professor at University of Manitoba, Canada Canada Research Chair in Ubiquitous Analytics (Tier 2) pourang.Irani [at] cs.umanitoba.ca