

# URAN OH

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Robotics Institute  
School of Computer Science  
Carnegie Mellon University

## RESEARCH STATEMENT

The goal of my research in Human-Computer Interaction (HCI) is to enrich user experience by improving information access to both digital and physical environments for users with various needs especially for people with visual impairments. I am particularly interested in mobile and wearable assistive technologies, and interaction designs including gestural user interfaces.

## EDUCATION

### Ph. D. in Computer Science (Aug. 2010 – Dec. 2016)

University of Maryland, College Park, USA

Dissertation: Accessible On-Body Interaction for People With Visual Impairments

Advisor: Dr. Leah Findlater

### B.S. in Computer Science and Engineering (Mar. 2006 – Feb. 2010)

Ewha Woman's University, Seoul, South Korea

Advisor: Dr. Hyokyung Bahn

## RESEARCH AND WORK EXPERIENCE

### Postdoc Research Fellow (Mar. 2017 – current)

Carnegie Mellon University, USA

Advisors: Dr. Chieko Asakawa and Dr. Kris Kitani

### Graduate Research Assistant (May 2012 – Dec. 2016)

University of Maryland, College Park, USA

Advisor: Dr. Leah Findlater

### Research Intern (May 2015 – Oct. 2015)

Mobile Interactive Computing Group, Google Research, Mountain View, USA

Advisors: Dr. Hao Lü and Dr. Yang Li

### Graduate Research Assistant (May 2012 – Jul. 2012)

University of Maryland, College Park, USA

Advisor: Dr. Don Perlis

## PUBLICATIONS

### Journal Articles

1. Lee Stearns, **Uran Oh**, Leah Findlater, Jon E. Froehlich. (2017) TouchCam: Realtime Recognition of Location-Specific On-Body Gestures to Support Users With Visual Impairments. *ACM Journal on Interactive, Mobile, Wearable and Ubiquitous Technology (IMWUT)*, To Appear.
2. Lee Stearns, Ruofei Du, **Uran Oh**, Catherine Jou, Leah Findlater, David A. Ross, Jon E. Froehlich. (2016) Evaluating Haptic and Auditory Directional Guidance to Assist Blind People in Reading

Printed Text Using Finger-Mounted Cameras. *ACM Transactions on Accessible Computing (TACCESS)*, Vol. 9, No. 1, Article 1.

3. **Uran Oh** and Leah Findlater. (2015) A Performance Comparison of On-Hand versus On-Phone Nonvisual Input by Blind and Sighted Users. *ACM Transactions on Accessible Computing (TACCESS)*, Vol. 7, No. 4, Article 14.
4. **Uran Oh**, Stacy Branham, Leah Findlater and Shaun Kane. (2015) Audio-Based Feedback Techniques for Teaching Touchscreen Gestures. *ACM Transactions on Accessible Computing (TACCESS)*, Vol. 7, No. 3, Article 9.
5. Joyce J. Whang, **Uran Oh**, Aeyoung Kim and Sang-Ho Lee. (2011) Privacy Preserving Protocols for Finding the Similarity between Two DNA Sequences with a Blind Third Party. *Journal of Convergence Information Technology (JCIT)*, Vol 6:10, pages 33-40.
6. **Uran Oh**, Soojung Lim, and Hyokyung Bahn. (2010) Channel Reordering and Prefetching Schemes for Efficient IPTV Channel Navigation. *IEEE Transactions on Consumer Electronics*, Vol. 56, Issue 2.
7. Eunji Lee, Jiyoung Whang, **Uran Oh**, Kern Koh, and Hyokyung Bahn. (2009) Popular Channel Concentration Schemes for Efficient Channel Navigation in Internet Protocol Televisions. *IEEE Transactions on Consumer Electronics*, Vol. 55, Issue 4.

#### Conference Papers

1. Lee Stearns, **Uran Oh**, Leah Findlater, and Jon E. Froehlich. (2017) TouchCam: Realtime Recognition of Location-Specific On-Body Gestures to Support Users with Visual Impairments. *Proceedings of ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT)*. To Appear.
2. **Uran Oh**, Lee Stearns, Alisha Pradhan, Jon. E. Froehlich, and Leah Findlater. (2017) Investigating Microinteractions for People with Visual Impairments and the Potential Role of On-Body Interaction. *Proceedings of ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)*. To Appear.
3. Daisuke Sato, **Uran Oh**, Kakuya Naito, Hironobu Takagi, Kris Kitani, and Chieko Asakawa. (2017) NavCog3: An Evaluation of a Smartphone-Based Blind Indoor Navigation Assistant with Semantic Features in a Large-Scale Environment. *Proceedings of ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)*. To Appear.
4. Lee Stearns, **Uran Oh**, Bridge J. Cheng, Leah Findlater, David A. Ross, Rama Chellappa, Jon E. Froehlich. (2016) Localization of Skin Features on the Hand and Wrist From Small Image Patches. *Proceedings of International Conference of Pattern Recognition (ICPR)*.
5. **Uran Oh** and Leah Findlater. (2014) Design of and Subjective Response to On-body Input for People with Visual Impairments. *Proceedings of ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)*. 115-122.
6. Stearns, Lee, Ruofei Du, **Uran Oh**, Yumeng Wang, Leah Findlater, Rama Chellappa, and Jon E. Froehlich. (2014) The Design and Preliminary Evaluation of a Finger-Mounted Camera and Feedback System to Enable Reading of Printed Text for the Blind. *Proceedings of Assistive Computer Vision and Robotics (ACVR)*.
7. Hanlu Ye, Meethu Malu, **Uran Oh** and Leah Findlater. (2014) Current and Future Mobile and Wearable Device Use by People With Visual Impairments. *Proceedings of ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, 3123-3132.

8. **Uran Oh**, Shaun Kane and Leah Findlater. (2013) Follow That Sound: Using Sonification and Corrective Verbal Feedback to Teach Touchscreen Gestures. *Proceedings of ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)*. 13:1-13:8.
9. **Uran Oh** and Leah Findlater. (2013) The Challenges and Potential of End-user Gesture Customization. *Proceedings of ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)*, 1129-1138.

#### Workshop Paper

1. Lee Stearns, Ruofei Du, **Uran Oh**, Yumeng Wang, Leah Findlater, Rama Chellappa, and Jon E. Froehlich. (2014) The Design and Preliminary Evaluation of a Finger-Mounted Camera and Feedback System to Enable Reading of Printed Text for the Blind. *Proceedings of European Conference on Computer Vision Workshop on Assistive Computer Vision and Robotics (ECCV/ACVR)*, 615–631

#### Posters

1. Leah Findlater, Lee Stearns, Ruofei Du, **Uran Oh**, David Ross, Rama Chellappa, and Jon E. Froehlich. (2015) Supporting Everyday Activities for Persons With Visual Impairments Through Computer Vision-Augmented Touch. *Proceedings of ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)*. 383–384.
2. Preeti Bhargava, Michael T. Cox, Tim Oates, **Uran Oh**, Matthew Paisner, Don Perlis, Jared Shamwell. (2012) The Robot Baby and Massive Metacognition: Future Vision. *IEEE International Conference on Development and Learning and Epigenetic Robotics (ICDL/EpiRob)*.
3. Jared Shamwell, Tim Oates, Preeti Bhargava, Michael T. Cox, **Uran Oh**, Matthew Paisner, Don Perlis, (2012) The Robot Baby and Massive Metacognition: Early Steps via Growing Neural Gas. *IEEE International Conference on Development and Learning and Epigenetic Robotics (ICDL/EpiRob)*.

## INVITED TALKS AND CONFERENCE PRESENTATIONS

### [Accessible On-Body Interaction for People With Visual Impairments \(Nov. 7th, 2016\)](#)

Diversity in Computing Summit held by Maryland Center for Women in Computing  
College Park, Maryland, USA

### [Design of and Subjective Response to On-Body Input for People With Visual Impairments \(Oct. 21st, 2014\)](#)

ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)  
Rochester, New York, USA

### [Follow That Sound: Using Sonification and Corrective Verbal Feedback to Teach Touchscreen Gestures \(Oct. 23rd, 2013\)](#)

ACM SIGACCESS Conference on Computers and Accessibility (ASSETS)  
Bellevue, Washington, USA

### [Challenges and Potential of End-User Gesture Customization \(May 22nd, 2013\)](#)

30th Annual Human-Computer Interaction Lab Symposium  
College Park, Maryland, USA

### [Challenges and Potential of End-User Gesture Customization \(Apr. 30th, 2013\)](#)

ACM SIGCHI Conference on Human Factors in Computing Systems (CHI)  
Paris, France

## **GUEST LECTURES**

[A Performance Comparison of On-Hand Versus On-Phone Nonvisual Input by Blind and Sighted Users \(Nov. 30th, 2016\)](#)

INST701 Introduction to Research Methods  
University of Maryland, College Park, USA

[Touchscreen Accessibility for People With Visual Impairments \(Feb. 10th, 2016\)](#)

INST728Z Inclusive Technology Design  
University of Maryland, College Park, USA

## **SELECTIVE MEDIA COVERAGE**

[This New Tech Is Letting Blind People Read Without Braille \(Nov. 15th, 2016\)](#)

Jess Vilvestre, Futurism

[Tiny Fingertip Camera Helps Blind People Read Without Braille \(Nov. 9th, 2016\)](#)

Aviva Rutkin, New Scientist

[Fingertip Cameras Reads to the Blind \(Nov. 10th, 2014\)](#)

Stephanie Mlot, PC Magazine

## **AWARDS AND SCHOLARSHIP**

[Industry-Academic Cooperation Scholarship \(Apr. 2015 – May 2016\)](#)

LG Uplus Corporation

[HCIL Conference Travel Award \(2013\)](#)

Human-Computer Interaction Lab  
University of Maryland, College Park

[Gannon Travel Award \(2013\)](#)

University of Maryland, College Park

[Dean's Fellowship \(2010 – 2011\)](#)

University of Maryland, College Park

## **TEACHING**

[University of Maryland, College Park](#)

- CompSciConnect Summer School for 6th Girls (Summer 2012)
- CMSC131 Object-Oriented Programming I (Spring 2012)
- CMSC106 Introduction to C Programming (Fall 2011)
- CMSC216 Introduction to Computer Systems (Summer 2011)
- CMSC250 Discrete Structures (Spring 2011)
- CMSC102 Introduction to Information Technology (Fall 2010)

## **SERVICE**

[Vice President of Korean Graduate Association \(2012 – 2015\)](#)

University of Maryland, College Park

[Peer Reviewer \(2014, 2015, 2017\)](#)

International Journal of Human Computer Studies (2017)

SIGCHI Conference of Human Factors in Computing Systems (2014, 2015, 2017)  
SIGACCESS Conference on Computers and Accessibility (2015, 2017)

[Student Volunteer \(2013, 2014, 2016\)](#)

SIGCHI Conference of Human Factors in Computing Systems (2013, 2014)  
Annual Human-Computer Interaction Lab Symposium (2013, 2014, 2016)