

# HAIJUN XIA

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## RESEARCH INTERESTS

My research area is in Human-Computer Interaction. I focus on unleashing and amplifying our creativity with new **representations** of digital content as well as direct, intuitive, and flexible **interactions**.

## EDUCATION

<b>Ph.D. in Computer Science</b> , Advisor: Daniel Wigdor Department of Computer Science, University of Toronto, Canada	2015 – 2019 (expected)
<b>M.Sc. in Computer Science</b> , Advisor: Daniel Wigdor Department of Computer Science, University of Toronto, Canada	2013 - 2015
<b>B.Eng. in Computer Science (with Honors)</b> Department of Computer Science, Tsinghua University, China	2009 - 2013

## AWARDS AND HONORS

<b>Microsoft Ph.D. Fellowship</b> (10 recipients from North America)	2018
<b>Adobe Ph.D. Fellowship</b> (10 recipients worldwide)	2018
<b>Best Paper Nomination ACM CHI 2018</b> (top 5%)	2018
<b>Best Paper Nomination ACM CHI 2017</b> (top 4%)	2017
<b>Best Paper Nomination ACM CHI 2017</b> (top 4%)	2017
<b>Best Paper Award ACM CHI 2016</b> (top 1%)	2016
<b>Wolfond Fellowship</b> , University of Toronto	2013
<b>Outstanding Undergraduate Awards</b> , Tsinghua University	2013

## PUBLICATIONS – FULL PAPER

Most work in HCI is published as conference papers, among which CHI and UIST are the premiere venues.

- [10] Kim, N., Riche, N., Bach, B., Xu, G., Brehmer, M., Hinckley, K., Pahud, M., **Xia, H.**, McGuffin, M., and Pfister, H. 2019 DataToon: Drawing Dynamic Network Comics With Pen + Touch Interaction. To appear in *Proceedings of the ACM annual conference on Human Factors in Computing Systems*. CHI 2019. ACM, New York, NY
- [9] 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*. CHI 2019. ACM, New York, NY
- [8] **Xia, H.**, Herscher, S., Perlin, K., and Wigdor, D. 2018 Spacetime: Enabling Fluid Individual and Collaborative Editing in Virtual Reality. In *Proceedings of the ACM symposium on user interface software and technology*. UIST 2018. ACM, New York, NY, 853-866.
- [7] Lu Z., **Xia, H.**, Heo, S., and Wigdor, D. 2018 You Watch, You Give, and You Engage: A Study of Live Streaming Practices in China. In *Proceedings of the ACM annual conference on Human Factors in Computing Systems*. CHI 2018. ACM, New York, NY. 466-479.
- [6] **Xia, H.**, Riche, N., Chevalier, F. Araujo, B., and Wigdor, D. 2018 DataInk: Enabling Direct and Creative Data-Oriented Drawing. In *Proceedings of the ACM annual conference on Human Factors in Computing Systems*. CHI 2018. ACM, New York, NY. 223-236. **Best Paper Honorable Mention**
- [5] **Xia, H.**, Hinckley, K, Pahud, M., Tu, X., and Buxton, B. 2017 WritLarge: Ink Unleashed by Unified Scope, Action, & Zoom. In *Proceedings of the ACM annual conference on Human Factors in Computing Systems*. CHI 2017. ACM, New York, NY. 3227-3240. **Best Paper Honorable Mention**
- [4] **Xia, H.**, Araujo, B., and Wigdor, D. 2017. Collection Objects: Enabling Fluid Formation and Manipulation of Aggregate Selections. In *Proceedings of the ACM annual conference on Human Factors in Computing Systems*. CHI 2017. ACM, New York, NY. 5592-5604. **Best Paper Honorable Mention**
- [3] **Xia, H.**, Araujo, B., Grossman, T., and Wigdor, D. 2016. Object-Oriented Drawing. In *Proceedings of the ACM annual conference on Human Factors in Computing Systems*. CHI 2016. 4610-4621. **Best Paper Award**

- [2] **Xia, H.**, Grossman, T., and Fitzmaurice, G. 2015. NanoStylus: Enhancing Input on Ultra-Small Displays with a Finger-Mounted Stylus. *In Proceedings of the ACM symposium on user interface software and technology*. UIST 2015. ACM, New York, NY, 447-456.
- [1] **Xia, H.**, Jota, R., McCanny, B., Yu, Z., Forlines, C., Singh, K., and Wigdor, D. 2014. Zero-Latency Tapping: Using Hover Information to Predict Touch Locations and Eliminate Touchdown Latency. *In Proceedings of the ACM symposium on user interface software and technology*. UIST 2014. ACM, New York, NY, 205-214.

## RESEARCH EXPERIENCE

- Stanford University, CA** June – September 2018  
 Visiting researcher with Professor Maneesh Agrawala.  
 Conducting research on Automatic visual content generation from text.
- New York University, New York, NY** October 2017- March 2018  
 Visiting researcher with Ken Perlin from New York University.  
 Conducted research on novel interaction techniques in virtual reality.
- Microsoft Research, Redmond, WA** May - August 2017  
 Research intern in EPIC Group with Ken Hinckley, Michel Pahud, and Bill Buxton.  
 Interaction techniques for early stage design with pen and touch input.
- Microsoft Research, Redmond, WA** May - August 2016  
 Research intern in Natural Interaction Group with Ken Hinckley, Michel Pahud, and Bill Buxton. Interaction techniques for early stage design with pen and touch input.
- Autodesk Research, Toronto, Canada** January - April 2015  
 Research intern in User Interface Research Group with Tovi Grossman.  
 Developed a wearable device for fast and accurate input on ultra-small screens.
- Microsoft Research Asia, Beijing** January - April 2013  
 Research intern in HCI Group with Koji Yatani.  
 Developed a system to support ESL writing.

## INVITED TALKS

- York University, School of Information Science (York, Canada)** December 2018  
*The Power of Representation in Human-Computer Interaction*
- Toronto User Experience (TUX) (Toronto, Canada)** November 2018  
*Supporting Direct Human-Computer Communication.*
- University of Paris-Sud, Computer Science Department, HCI Group (Paris, France)** October 2018  
*Supporting Direct Human-Computer Communication*
- Stanford University, Computer Science Department, HCI Group (Stanford, CA)** August 2018  
*Not your fault! Enhancing Creativity via Direct Representation and Manipulation*
- ACM SIGGRAPH 2018, BEST of SIGCHI, Invited Speaker (Vancouver, Canada)** August 2018  
*DataInk: Enabling Direct and Creative Data-Oriented Drawing*
- Alibaba Group, DAMO Academy (Sunnyvale, CA)** August 2018  
*Not your fault! Enhancing Creativity via Direct Representation and Manipulation*
- Brain, Invited Speaker (San Mateo, CA)** July 2018  
*Not your fault! Enhancing Creativity via Direct Representation and Manipulation*
- BlueDot, Invited Speaker (Toronto, Canada)** May 2018  
*DataInk: Enabling Direct and Creative Data-Oriented Drawing*
- CPTTE 2017, Conference on Pen&Touch Technology in Education, Invited Speaker (Evanston, IL)** October 2017  
*Object-Oriented Representation: Enabling Direct Manipulation of Abstract Content*  
*WritLarge: Ink Unleashed by Unified Scope, Action, & Zoom*
- Autodesk Research, Invited Speaker (Toronto, Canada)** September 2014  
*Zero-Latency Tapping: Using Hover Information to Predict Touch Locations and Eliminate Touchdown Latency*

## ACADEMIC SERVICE

**Program Committee, Sponsorship Co-Chair**, ACM CHI 2020

**Program Committee, Associate Chair (AC)**, ACM CHI 2019 Papers and Notes

**Program Committee, Associate Chair (AC)**, ACM CHI'18 Late Breaking Work

**Program Committee, Associate Chair (AC)**, Chinese CHI'18

**Program Committee, Associate Chair (AC)**, ACM CHI'17 Interactivity

**Reviewer** ACM CHI'15, '16, 17, 18, ACM UIST'16, 17, 18, ACM GI'17, ACM ISS'18, IEEE VIS'18,

## TEACHING EXPERIENCE

**Co-Instructor**, University of Toronto

Fall 2018

*CSC318 Design of Interactive Computational Media*

3rd year undergraduate course. Designed course curriculum, led lectures and design studios, and supervised student group projects.

**Teaching Assistant**, University of Toronto

Fall 2017

*CSC2537 Information Visualization*

Graduate course on information visualization. Led studios and graded assignments.

**Teaching Assistant**, University of Toronto

Winter 2018, 2017

*CSC318 Design of Interactive Computational Media*

Winter, Fall 2016

3rd year undergraduate course. I have worked on this course multiple times with several instructors and faculty members. I have designed course material, led tutorials, graded assignments, and advised group projects.

Winter, Fall 2015

Winter 2014, Fall 2013

**Teaching Assistant**, University of Toronto.

Fall 2014

*CSC148 Introduction to Computer Programming*

1st year undergraduate course. Led tutorials, lab sessions, and graded assignments.

## STUDENTS MENTORED

Devamardeep Hayatpur, Undergraduate student, University of Toronto

2018

Sebastian Herscher, Ph.D. student, Computer Science, New York University

2018

Zhicong Lu, Ph.D. student, Computer Science, University of Toronto

2017

Michael Wang, Undergraduate student, Computer Science, University of Toronto

2017

Ming Feng Wan, Undergraduate student, Computer Science, University of Toronto

2017

## PATENTS PENDING

[4] Hinckley, K. P., Pahud, M., Buxton, W. A. S., and Xia, H. 2018. Unified system for bimanual interactions. U.S. Patent Application No. 15/437,352.

[3] Hinckley, K. P., Buxton, W. A. S., Pahud, M., and Xia, H. 2018. Unified system for bimanual interactions on flexible representations of content. U.S. Patent Application No. 15/437,362.

[2] Grossman, T., Fitzmaurice, G., and Xia, H. 2017. Enhancing input on small displays with a finger mounted stylus. U.S. Patent Application No. 15/148,978.

[1] Forlines, C., Costa, RJJ., Wigdor, D., Singh, K., and Xia, H. 2016. Systems and methods for using hover information to predict touch locations and reduce or eliminate touchdown latency. US Patent App. 14/859,185.

## REFERENCES

**Daniel Wigdor**, Associate Professor of Computer Science, University of Toronto

**Ravin Balakrishnan**, Professor and Chair of Computer Science, University of Toronto

**Ken Hinckley**, Principle Researcher, Microsoft Researcher

**Ken Perlin**, Professor of Computer Science, New York University

**Maneesh Agrawala**, Professor of Computer Science, Stanford University

**Michel Beaudouin-Lafon**, Professor of Computer Science Université Paris-Sud