

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

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

AWARDS AND HONORS

Microsoft Ph.D. Fellowship (10 recipients from North America)	2018
Adobe Ph.D. Fellowship (10 recipients worldwide)	2018
Best Paper Nomination ACM CHI 2018 (top 5%)	2018
Best Paper Nomination ACM CHI 2017 (top 4%)	2017
Best Paper Nomination ACM CHI 2017 (top 4%)	2017
Best Paper Award ACM CHI 2016 (top 1%)	2016
Wolfond Fellowship , University of Toronto	2013
Outstanding Undergraduate Awards , 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 interactive system to support ESL writing.

Tsinghua University, Beijing, China

May – December 2012

Research Assistant in HCI Group with Professor Yuanchun Shi.

Conducted research in cross-device interaction..

INVITED TALKS

Tsinghua University, Computer Science Department, HCI Group, Beijing, China

December 2018

The Power of Representation in Human-Computer Interaction

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
Winter, Fall 2015
Winter 2014, Fall 2013
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.

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.