

Mingyuan Zhong

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<https://jasonzhong.com> ◇ myzhong@cs.washington.edu

EDUCATION

University of Washington

Ph.D. Student in Computer Science & Engineering

Advisors: James Fogarty & Jacob Wobbrock

Seattle, WA

Sep. 2019–present

Tsinghua University

B. Eng. in Computer Science & Technology

Beijing, China

Aug. 2014–July 2019

PUBLICATIONS

- Junhan Kong, *Mingyuan Zhong*, James Fogarty, Jacob O. Wobbrock: The Ability-Based Design Mobile Toolkit (ABD-MT): Developer Support for Runtime Interface Adaptation Based on Users' Abilities. (MobileHCI '24, to appear)
- Junhan Kong, *Mingyuan Zhong*, James Fogarty, Jacob O. Wobbrock: Quantifying Touch: New Metrics for Characterizing What Happens During a Touch. (ASSETS '22, 🏆 Honorable Mention).
- Michael Cross, Leping Qiu, *Mingyuan Zhong*, Yuntao Wang, Yuanchun Shi: One-Dimensional Eye-Gaze Typing Interface for People with Locked-in Syndrome. (UIST '22, Poster).
- Raymond Fok, *Mingyuan Zhong*, Anne Spencer Ross, James Fogarty, Jacob O. Wobbrock: A Large-Scale Longitudinal Analysis of Missing Label Accessibility Failures in Android Apps. (CHI '22).
- Mingrui "Ray" Zhang, *Mingyuan Zhong*, Jacob O. Wobbrock: Ga11y: An Automated GIF Annotation System for Visually Impaired Users. (CHI '22).
- Junhan Kong, *Mingyuan Zhong*, James Fogarty, Jacob O. Wobbrock: New Metrics for Understanding Touch by People with and without Limited Fine Motor Function. (ASSETS '21, Poster).
- *Mingyuan Zhong*, Gang Li, Peggy Chi, Yang Li: HelpViz: Automatic Generation of Contextual Visual Mobile Tutorials from Text-Based Instructions. (UIST '21).
- *Mingyuan Zhong*, Gang Li, Yang Li: Spacemaker: Rapid UI Design Exploration Using Lightweight Markup Enhancement and Crowd Genetic Programming. (CHI '21).
- Yue Qin, Chun Yu, Zhaoheng Li, *Mingyuan Zhong*, Yukang Yan, Yuanchun Shi: ProxiMic: Convenient Voice Activation via Close-to-Mic Speech Detected by a Single Microphone. (CHI '21).
- *Mingyuan Zhong*, Chun Yu, Qian Wang, Xuhai Xu, Yuanchun Shi: ForceBoard: Subtle Text Entry Leveraging Pressure. (CHI '18).
- Chun Yu, Ke Sun, *Mingyuan Zhong*, Xincheng Li, Peijun Zhao, Yuanchun Shi: One-Dimensional Handwriting: Inputting Letters and Words on Smart Glasses. (CHI '16, 🏆 Honorable Mention).
- Chun Yu, Ke Sun, *Mingyuan Zhong*, Xincheng Li, Yuanchun Shi: One-Dimensional Handwriting Input Method and Apparatus. Chinese Patent, Pub No. CN105549890A.

RESEARCH EXPERIENCE

• Research Internship at Meta Reality Labs

Host: Mingrui Zhang

Summer 2024

- Conducted research on LLM applications in user interaction.

• PlayBridge: Making Educational Games More Accessible for Children with Motor Impairments

University of Washington | Advisors: James Fogarty & Jacob Wobbrock

2023

- Developed an system that captures game UI and allows efficient annotation of potential game targets.
- Designed and developed strategies to resolve time limitations and transform gesture-based interactions.

- **Repairing and Enhancing Mobile Accessibility with Structural Templates**
University of Washington | Advisors: James Fogarty & Jacob Wobbrock 2021–2023
 - Designed a structure-based component discovery algorithm to provide reliable and repeatable interface element matching, allowing targeted repairs, modifications, and analyses on UI elements.
- **Longitudinal Study on Mobile Accessibility**
University of Washington | Advisors: James Fogarty & Jacob Wobbrock 2019–2021
 - Periodically crawled over 300 Android apps for over one year to gather accessibility data.
 - Analyzed accessibility failures and utilized heuristics, neural networks, and the crowd to create repairs.
- **Gal1y: Automated GIF Annotation System for Visually Impaired Users**
University of Washington | Advisor: Jacob Wobbrock 2021
 - Developed a mobile GIF annotation tool for BLV users utilizing an interaction proxy approach.
- **Improving Android Touch Accuracy**
Google (Internship) | Hosts: Wenxin Feng & Shumin Zhai Summer 2021
 - Developed algorithms to improve touch accuracy in different phases of a touch gesture by examining touch-related sensor data.
- **Automatic Generation of Contextual Visual Mobile Tutorials**
Google Research (Internship) | Hosts: Yang Li & Gang Li Summer 2020
 - Created a pipeline that automatically generates visual tutorials for mobile tasks from raw text instructions.
 - Addressed errors and incompatibility from automatic tutorial generation using beam search and look-ahead.
- **UI Design Exploration Using Crowd Genetic Programming**
Google Research (Internship) | Hosts: Yang Li & Gang Li Summer 2020
 - Created an HTML markup extension that allows designers to specify alternatives for design search.
 - Designed an enhanced genetic algorithm that can efficiently explore a large design space using crowd responses.
 - Integrated general tool support that allows designers to improve web design quickly at a low cost.
- **ForceBoard: Subtle Text Entry Leveraging Pressure**
HCI Lab, Tsinghua University | Advisors: Yuanchun Shi & Chun Yu 2016–2017
 - Proposed and designed a one-dimensional pressure-based text entry method.
 - Conducted a user study to examine people’s ability of continuous pressure control.
 - Implemented a ForceBoard prototype, which enabled text entry by combining the pressure control model and statistical decoding; conducted a user study to evaluate its performance.
- **One-Dimensional Handwriting: Gesture-based Text Entry**
HCI Lab, Tsinghua University | Advisors: Yuanchun Shi & Chun Yu 2015–2016
 - Conducted a user-participatory study to solicit designs of one-dimensional gestures for text entry.
 - Developed a prototype 1D Handwriting keyboard on Google Glass, where users could use one-dimensional gestures that felt familiar to input letters and words, similar to handwriting.

TEACHING EXPERIENCE & SERVICE

- **Teaching Assistant:** *Embedded Systems Capstone* (Autumn 2019); *Software Engineering* (Spring 2023, Winter 2024); *Interaction Programming* (Autumn 2023, Spring 2024).
- **Peer Reviewer:** for ACM CHI, UIST, IUI, ISMAR, TVCG, IMWUT since 2019.

SKILLS

- **Programming Language:** Python · Java · Kotlin · JavaScript · Swift
- **Technology:** Android · iOS · Linux · Arduino · OpenCV