Jay Henderson, PhD

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EDUCATION

PhD in Computer Science, Human-Computer Interaction (HCI)	Sept 2016 – Sept 2021
University of Waterloo	*Waterloo, ON, Canada*

- Supervised by Professor Edward Lank.
- Awarded the *David R. Cheriton Graduate Scholarship*, based on academic merit; valued at $10,000 annually.

BSc Hons. in Computer Science, Minors in Mathematics and Psychology	Sept 2012 – May 2016
Mount Allison University	*Sackville, NB, Canada*

EXPERIENCE

Postdoctoral Fellow & Contract Instructor	Nov 2022 – Present
School of Information Technology – Carleton University	*Ottawa, ON, Canada*

- Researching fundamental user input models in 3D and multi-user experiences in virtual reality (VR).

Senior Research Scientist	Sept 2021 – Nov 2022
Human Machine Interaction Lab – Huawei Technologies Canada	*Markham, ON, Canada*

- Conducting research and development of interaction techniques (HCI).
- Responsibilities include: developing & implementing novel input techniques; leading a team of engineers; coordinating university collaborations.

Research Assistant	Sept 2016 – Sept 2021
Human-Computer Interaction Lab – University of Waterloo	*Waterloo, ON, Canada*

- Led multiple HCI research projects, in domains including mobile computing, rehearsal-based interfaces, gesture learning, virtual/augmented reality (VR/AR), and cross-device interaction.
- Resulted in numerous publications at ACM's CHI and MobileHCI conferences.

Research Scientist Internship	Dec 2019 – May 2020
Meta Reality Labs (formerly Chatham Labs)	*Toronto, ON, Canada*

- Led research on explainability of recognition errors in virtual reality (VR).
- Work is published at ACM's Interactive, Mobile, Wearable and Ubiquitous Technologies (IMWUT) Journal, 2022.

Research Scientist Internship	Sept 2018 – Jan 2019
Noah's Ark Lab – Huawei Technologies Canada	*Markham, ON, Canada*

- Led research on teaching mid-air gesture interaction through touch (surface) rehearsal.
- Work is published at ACM's MobileHCI Conference, 2019.

Research Scientist Internship	May 2017 – Aug 2017
Inria / University of Lille	*Lille, France*

- Led research on how input accuracy can be communicated through vibrotactile haptic feedback on a smartwatch.
- Work is published at ACM's CHI Conference, 2019.

Software Developer	May 2016 – Sept 2016
Mysa Smart Thermostats	*St. John's, NL, Canada*

- Primary responsibility was front-end web development (Javascript) for controlling a smart thermostat system. Being an early stage start up, I also got involved in embedded system development (Go), database implementation (SQL), and connecting front-end and back-end components.

TECHNICAL SKILLS

Languages:
Java, Python, C#, JavaScript, HTML/CSS, R

Developer Tools, Libraries, & Platforms:
Git, Android, Unity, UWP/WPF/.NET, Node.js, Jupyter Notebook, pandas, Keras, scikit-learn, seaborn

Research:
Experimental Design, UI/UX, User Studies, Statistical Analysis, SPSS

Peer Reviewed Publications

*** *Note on conference papers: in Human-Computer Interaction, these are the preferred publication venues, being timelier and having the greatest impact. Top tier conferences require rigorous multi-stage review of manuscripts for archival proceedings.*

[P1] Arman Hafizi, **Jay Henderson**, Ali Neshati, Wei Zhou, Edward Lank, Daniel Vogel. 2023. *In-vehicle Performance and Distraction for Midair and Touch Directional Gestures.* To appear in Proceedings of CHI Conference on Human Factors in Computing Systems (CHI '23). *(Average acceptance rate: 28.39%)*

[P2] **Jay Henderson**, Tanya Jonker, Edward Lank, Daniel Wigdor, Ben Lafreniere. 2022. *Investigating Cross-Modal Approaches for Evaluating Error Acceptability of a Recognition-Based Input Technique.* In Proc. ACM Interact. Mob. Wearable Ubiquitous Technol. 6, 1 (March 2022), 22 pages. DOI: 10.1145/3517262. *(Average acceptance rate: 22.5%)*

[P3] **Jay Henderson**, Jessy Ceha, and Edward Lank. 2020. *STAT: Subtle Typing Around the Thigh for Head-Mounted Displays.* In 22nd International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI '20). Association for Computing Machinery, New York, NY, USA, Article 27, 1–11. DOI: 10.1145/3379503.3403549. *(Average acceptance rate: 23.1%)*

[P4] **Jay Henderson**, Sylvain Malacria, Mathieu Nancel, and Edward Lank. 2020. *Investigating The Necessity Of Delay In Marking Menu Invocation.* In Proceedings of CHI Conference on Human Factors in Computing Systems (CHI '20), Apr 25–30, 2020, Honolulu, HI USA. Association for Computing Machinery, New York, NY, USA, 1–13. DOI: 10.1145/3313831.3376296. *(Acceptance rate: 24.3%)*

[P5] **Jay Henderson**, Sachi Mizobuchi, Wei Li, and Edward Lank. 2019. *Exploring Cross-Modal Training via Touch to Learn a Mid-Air Marking Menu Gesture Set.* In Proceedings of the 21st International Conference on Human-Computer Interaction with Mobile Devices and Services (MobileHCI '19). Association for Computing Machinery, New York, NY, USA, Article 8, 1–9. DOI: 10.1145/3338286.3340119. *(Average acceptance rate: 23.1%)*

[P6] **Jay Henderson**, Jeff Avery, Laurent Grisoni, and Edward Lank. 2019. *Leveraging Distal Vibrotactile Feedback for Target Acquisition.* In Proceedings of CHI Conference on Human Factors in Computing Systems (CHI '19), May 4–9, 2019, Glasgow, Scotland UK. ACM, New York, NY, USA 11 Pages. DOI: 10.1145/3290605.3300715. *(Acceptance rate: 23.8%)*

[P7] **Jay Henderson**, Shaishav Siddhpuria, Keiko Katsuragawa, and Edward Lank. 2017. *Fostering large display engagement through playful interactions.* In Proceedings of the 6th ACM International Symposium on Pervasive Displays (PerDis '17). Association for Computing Machinery, New York, NY, USA, Article 20, 1–8. DOI: 10.1145/3078810.3078818. *(Acceptance rate: 55%)*

Teaching Experience

ITEC 4011 – AI for Digital Media – Instructor & Course Developer	2023
Carleton University	*Ottawa, ON, Canada*
CS 349 – Introduction to User Interfaces – TA/Instructional Apprentice	2018, 2019, 2020
University of Waterloo	*Waterloo, ON, Canada*
CS 105 – Introduction to Computer Programming 1 – TA/Instructional Apprentice	2017, 2019
University of Waterloo	*Waterloo, ON, Canada*
CS 449/649 – Human-Computer Interaction – TA	2019
University of Waterloo	*Waterloo, ON, Canada*
CS 106 – Introduction to Computer Programming 2 – TA/Instructional Apprentice	2017, 2018
University of Waterloo	*Waterloo, ON, Canada*
CS 135 – Designing Functional Programs – TA	2016
University of Waterloo	*Waterloo, ON, Canada*

COMP 1731 – Programming Techniques and Algorithms – TA 2016
Mount Allison University *Sackville, NB, Canada*

COMP 2931 – Introduction to Systems Programming – TA 2015
Mount Allison University *Sackville, NB, Canada*

SERVICE

Associate Chair (AC) 2021 – Present
DIS, CHI LBW, MobileHCI LBW

Peer Reviewer 2017 – Present
ACM SIGCHI Conferences (CHI, MobileHCI, AutoUI, DIS, ISS, and ETRA), IJHCI

ACM Name Change Committee 2019
Association for Computing Machinery
- As a transgender man, I was selected to serve on a committee that developed an overarching name change policy within all ACM publications. (`https://www.acm.org/publications/policies/author-name-changes`)

CHI Conference Allyship Program May 2019
ACM SIGCHI *Glasgow, Scotland*
- Served as a point of contact for attendees about equity. Selected for experience in equity-related activities, particularly, involvement in LGBTQ+ initiatives.

CHI Conference Student Volunteer May 2017
ACM SIGCHI *Denver, CO, USA*

S.M.I.L.E. Buddy Sept 2014 - May 2016
Mount Allison University / Cumberland YMCA *Amherst, NS, Canada*
- An accessibility oriented buddy program offered to children with disabilities, who may otherwise not be able to participate in typical programs of the like, due to their unique developmental needs. Occurred each Saturday morning of the academic year.