

PhD-level design researcher bridging human-computer interaction theory and UX practice, specialising in user research and experience. Expert in designing and executing mixed-methods studies and controlled user tests, transforming complex user data into compelling interaction flows, visualisations, and high-fidelity prototypes. Adept at driving iterative, human-centred design processes for complex hardware/software ecosystems, ensuring final products are intuitive and grounded in real-world user needs.

Education

- **PhD in Human-Computer Interaction, University of Glasgow** 📍 *Glasgow, Scotland*
Oct 2021 – Feb 2026 | **Skills:** User Studies, Unity Game Engine, Quantitative Analysis, Prototyping, Coding
Thesis: Designing for Comfort and Efficiency in Mid-Air Spatial Interfaces
My research explored the fundamental principles of user comfort and efficiency with 3D menu navigation and control schemes. Multiple user studies addressed core challenges of precision, user fatigue, and interaction design for 3D user interfaces, with findings directly applicable to both touchless interfaces spatial computing. The thesis introduces and tests novel interaction techniques to address these issues and proposes design recommendations for spatial interfaces
 - Led to several peer-reviewed publications
 - Invited as a keynote presenter at Ultraleap, discussing work from this thesis
- **MSc by Research - Human-Computer Interaction, The University of Edinburgh** 📍 *Edinburgh, Scotland*
Sep 2020 – Sep 2021 | Merit | **Skills:** User-Studies, Unity, Qualitative Analysis
Thesis: Don't Touch Me! An Exploration of Interface Design for Touchless Systems
The thesis explores the viability of touchless displays for public use. Through multiple user studies, it was discovered that people can use mid-air pointing and touchless displays without extensive prior training, and that people can correctly translate 3D movements and poses into potential on-screen actions. The thesis contributes preliminary design recommendations for touchless displays for public use
 - Accepted peer-reviewed conference publication from thesis
- **BSc Computer Science, The University of Edinburgh** 📍 *Edinburgh, Scotland*
Sep 2016 – Sep 2020 | First Class
Thesis: Explored navigation for visually impaired pedestrians. Through a systematic review and focus groups, a smartphone application was developed to facilitate walking navigation by utilising landmarks along the route instead of street and place names. Resulting in an easier navigation experience for visually impaired pedestrians

Work Experience

- **Research Assistant - Immersive Interaction, University of Glasgow** 📍 *Glasgow, Scotland*
Jun-2025 – ... | **Skills:** User Testing, Prototyping, Development, Quantitative Analysis, Qualitative Analysis
I lead the end-to-end design and analysis of multiple research projects across interdisciplinary teams.
 - Designed prototypes to assess user behaviour in social AR and VR
 - Presented actionable findings through both quantitative and qualitative analysis
 - Led to multiple [in-review] peer-reviewed conference publications

Work Experience (continued)

- **Extended Reality Research Intern, Logitech**  *Cork, Ireland*
Jun-2024 – Oct 2024 | **Skills:** User Studies, Prototyping, XR Development, User Design, Statistics, Research Communication
Designed and led user studies for the MX-Ink mixed-reality stylus.
 - Designed multiple user studies to understand how interaction is affected by user grip of the stylus
 - Discovered the stylus's greater precision compared to the Quest controller
 - Resulted in changes to the stylus firmware and OS to increase interaction accuracy
- **Digital Skills Project Research Assistant (Part-time), Digital Skills Education Limited**  *Glasgow, Scotland*
Jun 2020 – ... | **Skills:** Teaching, Public Speaking, Prototyping, Stakeholder liaison
Created and led numerous workshops, seminars and online courses to develop computer science skills.
 - Applied user-centred design methods to research, prototype, and test ?
 - Organised and ran multiple workshops to deliver complex computer science topics
 - Collaborated with stakeholders, presenting research findings and design recommendations
- **Assistant Technical Program Chair (Volunteer), CHI 2024, (ACM) SIGCHI**  *Honolulu, USA*
Aug 2022 – May 2024 | **Skills:** Large scale project management Problem-Solving, Management, Crisis Management
Helped organise CHI' 24, conference of over 4000 attendees.
 - Managed a volunteer team of over 100 people across several months before and during the conference
 - Served as the primary liaison between stakeholders and the organising committee
 - Created and ensured the smooth running of the technical program

Skills

Research	➤ Strong research skills in user-studies, HCI and interaction techniques
Data Analysis	➤ Advanced skills in both R, Python and NumPY statistical testing
Research Methods	➤ Usability testing, Survey Design, User Interviews, Qualitative & Quantitative Analysis
Prototyping	➤ Skills in rapid prototyping, Modelling, Figma, Adobe XD
Research Tools	➤ Advanced capabilities in Excel, Qualtrics and NVivo
Statistical Methods	➤ Expertise using statistical tests including ANOVA, T-test and post-hoc analysis.
Programming	➤ Strong proficiency with Python, C#, Java, Swift and Kotlin
Coding Tools	➤ Strong knowledge of Git, GitHub, Unity Game Engine
Stakeholder	➤ Presentations , Cross Team Collaboration, Actionable Reporting, Research Communication
Languages	➤ Academic-level reading, writing and speaking competencies in English.

Selected Publications

- **Waugh et al. (2025).** Everything to Gain: Combining Area Cursors with increased Control-Display Gain for Fast and Accurate Touchless Input. In: *CHI'25*.
- **Waugh et al. (2023)** Proxemic Cursor Interactions for Touchless Widget Control In: (SUI' 23)
- **Waugh et al. (2022)** Push or pinch? Exploring slider control gestures for touchless user interfaces In: (NORDICHI' 22)
- **Waugh et al. (2021)** Don't touch me! a comparison of usability on touch and non-touch inputs In: (INTERACT' 21)