Johann Wentzel

HCI Researcher • Virtual and Augmented Reality • Accessibility

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Education

University of Waterloo	**Waterloo, ON**

Doctor of Philosophy (PhD) - Computer Science (Human-Computer Interaction), GPA: 96% — *Graduating Fall 2024*
- **Thesis:** *Bring-Your-Own Input: Context-Aware Multi-Modal Input for More Accessible VR*

Master of Mathematics - Computer Science (Human-Computer Interaction), GPA: 96% — *Sept 2018 - Apr 2020*
- Thesis-based program, resulting in an award-winning publication **[C2]** in VR ergonomics.

University of Calgary	**Calgary, AB**

Two Bachelor's Degrees: Computer Science, Business Technology Management — *Sept 2011 - Jun 2017*
- Honours first class (high GPA), and highest graduating GPA in business program.

Industry Research Employment

Meta Reality Labs	**New York, NY**

Research Scientist Intern, Input Explorations (mentors: Bruno de Araujo, Jota Costa) — *Sept 2022 - Jan 2023*
- Designed and developed AR/VR interaction techniques utilizing eye tracking and EMG transformer models.
- Developed, organized, and led Unity input experiments to evaluate AR/VR eye tracking input accuracy.
- Analyzed experimental data using statistical tests like ANOVA and t-tests to reveal trends and overall effects.
- Created a dataset of gaze dynamics and eye-tracking accuracy for consumer VR hardware to aid productization.

Microsoft Research	**Redmond, WA (Remote)**

Research Intern, Ability Team (mentors: Martez Mott, Sasa Junuzovic, Edward Cutrell) — *Jun 2022 - Sept 2022*
- Primary author and developer for a VR accessibility research experiment involving multimodal VR input and 3D input remapping, using WebXR and Javascript.

Research Intern, Ability Team (mentors: Martez Mott, Sasa Junuzovic, Edward Cutrell) — *May 2021 - Aug 2021*
- Primary author of an accessibility research publication **[C3]** using qualitative methods to investigate the use of multi-device input configurations by people with mobility limitations.
- Coordinated cross-functional collaboration across Xbox and Accessibility teams to develop a qualitative research agenda.

Autodesk Research	**Toronto, ON**

Research Intern, UI Research Group (mentors: Fraser Anderson, Tovi Grossman) — *Jan 2020 - May 2020*
- Primary author and sole Unity developer for a research paper on hybrid VR-desktop interfaces, resulting in a patent**]** and conference publication **[C4]**.
- Second author of a conference publication implementing generative AI to create intentionally "ugly" designs.

Selected Publications

[C4] **Johann Wentzel**, Fraser Anderson, George Fitzmaurice, Tovi Grossman, Daniel Vogel. 2024. *SwitchSpace: Understanding Context-Aware Peeking Between VR and Desktop Interfaces*. To appear in Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '24).

[C3] **Johann Wentzel**, Sasa Junuzovic, James Devine, John Porter, Martez Mott. 2022. *Understanding How People with Limited Mobility Use Multi-Modal Input*. In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '22). DOI: https://doi.org/10.1145/3491102.3517458

[C2] **Johann Wentzel**, Greg d'Eon, and Daniel Vogel. 2020. *Improving Virtual Reality Ergonomics through Reach-Bounded Non-Linear Input Amplification*. In Proceedings of the CHI Conference on Human Factors in Computing Systems (CHI '20). DOI: https://doi.org/10.1145/3313831.3376687
* Best Paper Honourable Mention (top 5% of submitted papers)

Skills

Programming Languages: C#, Swift, Python, R, HTML, CSS, Javascript, Objective-C, C++, SwiftUI
Dev tools: Unity, Xcode, ARKit, RealityKit, Android Studio, Bootstrap, React, NumPy, jQuery, NodeJS, Git.
Design tools: Figma, Sketch, Balsamiq, Adobe Illustrator, Final Cut Pro
Hobbies: Home servers, game development for VR, AR, iOS. Classically trained in piano, clarinet, voice.