

Brennan Jones

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Human-computer interaction (HCI) researcher with experience working on human-AI interfaces, developer tools, augmented and virtual reality (AR/VR), and technologies for distributed work. Skilled in running user studies, conducting foundational research, and building prototypes. Trained as a researcher, designer, developer, computer scientist, and communicator.

EDUCATION

Ph.D. in Computer Science (HCI), University of Calgary, Canada (GPA: 4.00/4.00) 2017.4 – 2021.6

Supervisory Committee: Dr. Anthony Tang (University of Toronto), Dr. Carman Neustaedter (Simon Fraser University), Dr. Ehud Sharlin, Dr. Wesley Willett; **Thesis:** *Designing Remote Collaboration Technologies for Wilderness Search and Rescue*

M.Sc. in Computer Science (HCI), University of Calgary, Canada (GPA: 3.85/4.00) 2014.9 – 2016.12

Thesis Advisor: Dr. Anthony Tang; **Thesis:** *Elevating Communication, Collaboration, and Shared Experiences between Peers in Mobile Video Communication using Drones*

B.Sc. in Computer Science (with First-Class Honours), University of Calgary, Canada (GPA: 3.75/4.00) 2011.9 – 2014.4

Concentration: Human-Computer Interaction; **Courses:** HCI, HRI, Computer Graphics, Software Engineering; **Extracurricular Activities:** RezNet, UCalgaryCares; **Honours Thesis:** *Improving Collaboration in Online Group Art Therapy*

WORK EXPERIENCE

Postdoctoral (Visiting) Researcher, Human-AI Interaction for AR, Reality Labs Research (RL-R), Meta 2022.4 – present

Designing, prototyping, and studying novel interfaces for **context-aware human-AI interaction on smart glasses** and next-generation wearable augmented reality (AR). **Collaborating with designers, engineers, and other research teams** to pursue relevant research questions and iterate on design ideas, **mentoring research interns**, and **publishing relevant findings** in academic papers.

UX Researcher III, Stadia and Immersive Stream, Google (Contractor via Adecco) 2021.11 – 2022.3

Worked on UX research to help build and improve **tools used by developers and publishers** to develop and port their games to the cloud-gaming platform. **Collaborated with partners in design, engineering, and project management** to determine relevant research questions and business needs and helped facilitate workshop-style activities to **translate research findings into business decisions**.

JEM Research Intern, Microsoft Research (MSR) Redmond 2021.6 – 2021.10

Worked on research exploring how to utilize spatial audio to improve hybrid video conferencing in meeting rooms, in collaboration with the **Microsoft Teams** product group, the **MSR Extended Perception, Interaction & Cognition (EPIC)** group, and the MSR Cambridge **Socially Intelligent Meetings** group.

Research Intern, Microsoft Research (MSR) Cambridge 2019.7 – 2019.9

Built a two-way XR robotic telepresence research prototype and conducted a **mixed-methods study** to understand how pairs of users adapt to different styles of remote collaboration in an office environment.

SELECTED RESEARCH HIGHLIGHTS

Context-Aware Human-AI Interaction for Smart Glasses and AR (Meta Reality Labs Research) 2022.4 – present

Researcher, Designer, Prototyper; Mixed-Methods Research, User Studies, Foundational Research, Generative AI, Large Language Models (LLMs), Conversational User Interfaces (CUIs), Prototyping (Unity, Node.js, React Native, Python)



Exploring how context-aware **AI agents** on smart glasses and AR devices can use environmental information and sensor data to generate and deliver timely and relevant guidance for users' goals. As part of this work, I designed and conducted **user studies** in the lab and in the field, **prototyped** human-centered AI experiences for smart glasses and mobile devices, and helped conduct **foundational interview, survey, and diary studies** to understand users' needs for such systems in the wild.

Publications:

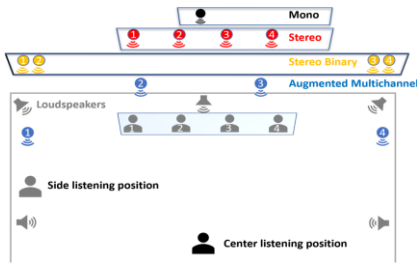
Jones, B., Xu, Y., Hood, M.A., Kader, M.S., and Eghbalzadeh, H. Using Generative AI to Produce Situated Action Recommendations in Augmented Reality for High-Level Goals. In *GenAICHI 2023: Workshop on Generative AI and HCI at CHI 2023*.

Lu, F., Xu, Y., Xu, X., **Jones, B.**, and Malamed, L.M. Exploring the Impact of User and System Factors on Human-AI Interactions in Head-Worn Displays. In *Proc. ISMAR 2023*, IEEE.

Spatial Audio for Microsoft Teams Meeting Rooms (Microsoft Research)

2021.6 – 2021.10

Researcher, Designer, Prototyper; **Mixed-Methods Research**, **Lab Studies**, **Prototyping**



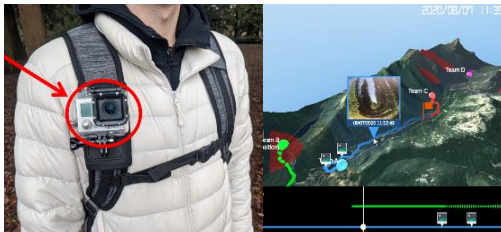
As part of an MSR internship in collaboration with the Microsoft Teams product group, we **designed, prototyped, and tested** different spatial audio configurations for the placements of remote users' voices in Microsoft Teams meeting rooms (using different mono, stereo, and surround-sound audio layouts). Our explorations discovered that in-room users prefer the widest available separation of voices, and wider placements made it easier for in-room users to distinguish between remote users' voices and follow the conversation. As a result of this work, spatial audio was integrated into a recent Microsoft Teams Rooms release: <http://tinyurl.com/teams-room-spatial-audio>

Publication: Hyrkas, J., Wilson, A.D., Tang, J., Gamper, H., Sodoma, H., Tankelevitch, L., Inkpen, K., Chappidi, S., and **Jones, B.** Spatialized Audio and Hybrid Video Conferencing: Where Should Voices be Positioned for People in the Room and Remote Headset Users? In *Proc. CHI 2023*, ACM.

Designing Remote Collaboration Technologies for Wilderness Search and Rescue (WSAR)

2017.4 – 2021.6

Lead Researcher, Lead Designer, Lead Developer; **Qualitative Research**, **Interviews**, **Contextual Inquiry**, **Prototyping (Unity, WebGL)**



For my PhD thesis, I focused on advancing understanding of how to design technologies to better support remote collaboration between WSAR responders. I conducted **interviews** with WSAR workers and an **observation study** of WSAR training to better understand WSAR workers' needs and challenges. Following this, I **designed, prototyped, and evaluated** an interface that aims to enhance WSAR commanders' awareness of search operations through body-camera footage.

Project Page: <https://tinyurl.com/wsar-collab>

Publication: Jones, B., Tang, A., and Neustaedter, C. (2022). RescueCASTR: Exploring Photos and Live Streaming to Support Contextual Awareness in the Wilderness Search and Rescue Command Post. In *PACMHCI, (CSCW 2022)*, ACM.

VROOM: Virtual Robot Overlay for Online Meetings (Microsoft Research Cambridge)

2019.7 – 2021.4

Lead Researcher, Designer, Developer; **Mixed-Methods Research**, **Interviews**, **XR**, **Telepresence**, **Prototyping (Unity, Node.js)**



A two-way XR robotic telepresence technology probe, and subsequent **mixed-methods study** to understand its use by local and remote users working together on dynamic collaborative activities. By attaching a 360° camera to a telepresence robot, we provide the remote user with enhanced vision of the local environment, through which they can freely explore in VR. We also superimpose an avatar of the remote user into the local space over the robot, which the local user can see in AR through a HoloLens, allowing the remote user to be more expressive in the local environment.

Video Demo: <https://youtu.be/9ZZ-YdUU01w> | **Project Page:** <https://aka.ms/vroom-mrp>

Publication: Jones, B., Zhang, Y., Wong, P.N.Y., and Rintel, S. (2021). Belonging There: VROOM-ing into the Uncanny Valley of XR Telepresence. In *PACMHCI, 5 (CSCW1)*, ACM.

Emergency Video Calling

2017.5 – 2017.12

Researcher; **Qualitative Research**, **Interviews**, **Contextual Inquiry**



A **contextual-interview study** of emergency call takers and dispatchers. We spent time at three 9-1-1 call centres in western Canada to **observe** the work of call-takers and dispatchers, and to **conduct in-situ interviews** with them, to explore the potential benefits and challenges of introducing video to emergency calls. This study primarily focused on the perspective of those at the call centre, while future studies investigated the additional perspective of the caller.

Publication: Neustaedter, C., **Jones, B.**, O'Hara, K., and Sellen, A. (2018). The Benefits and Challenges of Video Calling for Emergency Situations. In *Proc. CHI 2018*, ACM. - **Honourable Mention Award (top 5% of all submissions)**

SELECTED SKILLS AND QUALIFICATIONS

HCI Research:

Lab Experiments, Field Studies, Observation Studies, Interview Studies, Workshops, Survey Research, Contextual Inquiry, Ethnographic Methods, Qualitative Methods, Quantitative Methods, Mixed Methods

Domain-Specific Topics:

Large Language Models (LLMs), Generative AI, Conversational User Interfaces, Human-AI Interaction, Prompt Engineering, AR/VR/XR

Programming languages, tools, platforms, and environments:

JavaScript, React, Node.js, Python, LangChain, C#, .NET, Visual Studio, Swift, Objective-C, PHP, MySQL, HTML, HTML5, CSS, Java, C, C++