Mehrad Faridan

mehradfaridan.github.io | faridan3838@gmail.com | Calgary, AB, Canada
Google Scholar | linkedin.com/in/mehradfaridan

Research Interests

I build mixed reality systems that help people teach and learn physical, hands-on skills, especially at a distance. My work combines new interaction techniques with live 3D capture, robots and haptics, and I test these systems with real instructors and learners. I am particularly interested in how mixed reality and AI can turn existing instruction, such as videos and live demonstrations, into guidance people can follow with their own hands.
Keywords: Mixed Reality; Learning Physical Skills; Remote Hands-on Instruction; Interaction Techniques; Haptics; Telepresence & Robotics; Tangible Interfaces

Education

University of Calgary, BSc in Computer Science 06/2027 (expected)
Research: Interactions Lab (Programmable Reality Lab), Advisor: Ryo Suzuki – Calgary, AB

University of Tokyo, Visiting Researcher, Cyber Interface Lab 01/2025 – 02/2026
Host: Hideaki Kuzuoka – Tokyo, Japan

Publications

[W.3] **Mehrad Faridan***, Takashige Suzuki*, Takafumi Kanaya, Ryo Suzuki, Hideaki Kuzuoka (2026). **Towards Scalable Remote Hands-on Education: Evaluating a Multi-Student Pointcloud Interface for Massage Therapy Education**. In *AHs 2026 (Poster)*.

[W.2] **Mehrad Faridan***, Takashige Suzuki*, Takafumi Kanaya, Ryo Suzuki, Hideaki Kuzuoka (2026). **Scalable Academy: Pointcloud Interface for Remote Hands-on Classroom**. In *IEEE VR 2026 Workshop (VR-HSA)*.

[C.4] Keiichi Ihara, Kyzyl Monteiro, **Mehrad Faridan**, Rubaiat Habib Kazi, Ryo Suzuki (2025). **Video2MR: Automatically Generating Mixed Reality 3D Instructions by Augmenting Extracted Motion from 2D Videos**. In *IUI 2025*.

[P.1] Shivesh Singh Jadon, **Mehrad Faridan**, Edward Mah, Rajan Vaish, Wesley Willett, Ryo Suzuki (2024). **Augmented Conversation with Embedded Speech-Driven On-the-Fly Referencing in AR**. *arXiv preprint*.

[C.3] **Mehrad Faridan**, Bheesha Kumari, Ryo Suzuki (2023). **ChameleonControl: Teleoperating Real Human Surrogates through Mixed Reality Gestural Guidance for Remote Hands-on Classrooms**. In *CHI 2023*.

[C.2] Keiichi Ihara, **Mehrad Faridan**, Ayumi Ichikawa, Ikkaku Kawaguchi, Ryo Suzuki (2023). **HoloBots: Augmenting Holographic Telepresence with Mobile Robots for Tangible Remote Collaboration in Mixed Reality**. In *UIST 2023*.

[C.1] Hiroki Kaimoto, Kyzyl Monteiro, **Mehrad Faridan**, Jiatong Li, Samin Farajian, Yasuaki Kakehi, Ken Nakagaki, Ryo Suzuki (2022). **Sketched Reality: Sketching Bi-Directional Interactions Between Virtual and Physical Worlds with AR and Actuated Tangible UI**. In *UIST 2022*.

[W.1] **Mehrad Faridan**, Marcus Friedel, Ryo Suzuki (2022). **UltraBots: Large-Area Mid-Air Haptics for VR with Robotically Actuated Ultrasound Transducers**. In *UIST 2022 Student Innovation Contest* (Honorable Mention).

C = conference paper · W = workshop, poster or student competition · P = preprint · * = co-first authors

Employment

Mixed Reality Developer, MaKami College – Hands-on Education 05/2022 – 10/2026

- Led the college's applied research program in mixed reality for hands-on training (massage therapy, health care aide and similar programs), in partnership with UCalgary, UTokyo, U Tsukuba, CU Boulder and Adobe Research
- Built ChameleonControl, a mixed reality system for remote hands-on teaching, and deployed it in a physiotherapy classroom; evaluated with 53 participants across 3 studies
- Contributed to HoloBots, which combines holographic telepresence with mobile robots for tangible remote collaboration (UIST 2023)
- Built Scalable Academy, a Unity / Meta Quest 3 VR system that lets one instructor supervise many students remotely by streaming live 3D point clouds of up to 6 students at once; a study with 8 massage-therapy instructors projected that one instructor could monitor up to 15 students

- Set up and ran the college's mixed reality research lab: chose, bought and maintained the equipment, and informally mentored an undergraduate researcher (Morteza Faraji)
- Published Papers: ChameleonControl (CHI 2023); HoloBots (UIST 2023); Video2MR (IUI 2025); Scalable Academy (AHs 2026; IEEE VR 2026 Workshop)

Visiting Researcher, University of Tokyo – Remote Collaboration, Mixed Reality 01/2025 – 02/2026

- Cyber Interface Lab. Hosted by Prof. Hideaki Kuzuoka; co-advised by Prof. Ryo Suzuki
- Research topic: Scalable remote hands-on education with multi-student point-cloud interfaces
- Designed and built Scalable Academy from system design through pilot studies with massage-therapy instructors
- Published Papers: Towards Scalable Remote Hands-on Education (AHs 2026); Scalable Academy (IEEE VR 2026 Workshop)

Haptics Engineer (Part-time), Ximira – Assistive Wearables, Haptics 06/2023 – 03/2024

- Worked on PHINIX, an Intel-funded AI wearable that helps blind and low-vision people navigate, read text and recognize faces; designed and 3D-printed prototype parts for its haptic bracelet
- Designed the audio and voice interface in Figma and wrote the UI Message Juggler, a module that sorts and prioritizes messages from PHINIX's detection features before they reach the user, for the open-source ROS 2 stack
- Staffed the CES 2024 booth demoing the device; PHINIX won PC Pro's Best of CES 2024

Undergraduate Researcher, University of Calgary – HCI, Mixed Reality, Robotics 01/2022 – 09/2022

- Interactions Lab (Programmable Reality Lab). Advised by Prof. Ryo Suzuki
- Research topic: Actuated tangible interfaces, telepresence robots and mid-air haptics for mixed reality
- Built UltraBots, robot-mounted ultrasound arrays that deliver mid-air haptics across a large VR area (UIST 2022 SIC, Honorable Mention)
- Contributed to Sketched Reality, sketching interactions between virtual and physical worlds with AR and actuated tangible UI (UIST 2022)

Honors, Awards & Selected Programs

Best of CES 2024 (PC Pro), as part of the Ximira PHINIX team	2024
Selected participant, Post-CHI XR Summer School, Copenhagen	2023
Invited to attend Meta Connect 2023 in person, as one of a select group of hackathon developers	2023
Honorable Mention, UIST 2022 Student Innovation Contest (UltraBots)	2022
Winner, Snap Creative Challenge, in collaboration with Snapchat	2022
Hackathons: MIT Reality Hack; Immerse The Bay (Stanford XR)	2024

Skills

XR Development: Unity (C#), Swift / visionOS, Meta Quest 3, HoloLens 2, Apple Vision Pro, point-cloud capture and streaming

Prototyping & Hardware: Python, Arduino, ROS 2, robotics, ultrasound mid-air haptics, haptic wearables, sensing hardware, tangible interfaces

Design Tools: Figma

Research Methods: System design, experimental design & user studies, mixed-methods analysis, classroom deployments, academic writing

References

Ryo Suzuki
Assistant Professor
University of Colorado Boulder, ATLAS Institute
& Department of Computer Science
ryo.suzuki@colorado.edu

Hideaki Kuzuoka
Professor
University of Tokyo, Cyber Interface Lab
kuzuoka@cyber.t.u-tokyo.ac.jp

Breean Cox
CEO
Ximira
breean@ximira.org

Jan Enter
CTO
MaKami College
jenter@makamicollege.com