Luis Mesias

Research Engineer | XR, Robotics, Haptics
luis.mesiasflores@case.edu • 813-389-9457 • luis.lemf.net • linkedin: /luis-mesias/

Summary

- Research engineer building real-time XR teleoperation and haptics systems (Unity/C#, ROS 2, WebRTC), from prototypes to field demonstrations.
- Co-led operator-side architecture for immersive teleoperation with sub-second closed-loop latency and synchronized video/tactile feedback across 2,000+ miles.

Skills

Languages: C#, Python, C++, MATLAB
XR/Robotics: Unity, ROS 2, WebRTC, Meta Quest, Ultraleap, Husarnet, Magic Leap
Systems: Networking, protocol/serial engineering, .NET Standard 2.0, hardware integration, documentation/training

Experience

Human Fusions Institute Oct 2020–Feb 2026
Research Assistant

- Co-led design of an operator-side VR and haptics stack for long-distance teleoperation; integrated Unity with ROS 2 and WebRTC to achieve sub-second end-to-end latency.
- Engineered field-deployable robustness (tunneled links via Husarnet; portable tracking/haptics hardware) enabling demos outside controlled lab networks.
- Designed a low-profile wearable stimulation interface compatible with optical hand tracking; improved fingertip localization accuracy from 70% to 92% and reduced mislocalized sensations from 27% to 4%.

VA Portland Health Care System Oct 2025–Dec 2025
VR Software Contractor (Independent)

- Delivered a Unity/C# Magic Leap projection environment with configurable head-/world-centric modes and rotation locking for experimental control.
- Produced documentation and training enabling continued use and extension after contract completion.

Highlights

- ANA Avatar XPRIZE semifinalist; teleoperation system featured by National Geographic and PBS NewsHour.
- Built an open-source, cross-platform stimulator interfacing library with typed APIs, simulated transport, and Unity/Python examples.
- Patent WO2023244529A1 licensed to Afference Inc.; doi: 10.1088/1741-2552/ad0563.

Education

Ph.D. Electrical Engineering (GPA 3.82), Case Western Reserve University, Cleveland, OH Aug 2020–Feb 2026

B.S.E. Electrical Engineering (GPA 3.96), Summa Cum Laude, Case Western Reserve University, Cleveland, OH Aug 2018–Aug 2020