Jack Haehl

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XR Developer & Creative Technologist with 4+ years shipping Unity/OpenXR AR, VR, and MR products in academia, research, and on the Meta Quest Store. I turn fuzzy ideas into polished immersive experiences. Unity is my second nature, so I can jump straight to layering in photogrammetry, computer vision, AI, and embedded hardware that makes spatial computing feel like magic. Strengths span spatial UX, rapid prototyping, and integrating hardware peripherals. Evident by success in a handheld magnetic-field visualizer, an AR dementia simulation to train caregivers, centimeter-accurate lunar digital-twin pipelines, and AI-driven Quest 3 avatars. I thrive as a high-output individual contributor and can step into tech-lead roles to keep teams unblocked and shipping.

Education

B.S Computer Science, Certificate Computer Gaming
Arizona State University - Tempe, Arizona - Dec. 2024

Experience

Lead VR Developer - Applications & Systems Aug. 2024 - Present
Digital Discovery Initiative - Arizona State University

- Led 7 Unity/C# devs building VR design-evaluation & mission-planning tools for a next-generation lunar surface vehicle, shipping weekly demos to partners.
- Architected a QGIS + Python digital-twin pipeline that fuses rover LiDAR, satellite DEMs, GIS layers, and photogrammetry splats into cm-accurate lunar landscapes using parallel processing.
- Re-created Apollo 17 and candidate Artemis sites and advised partners on capture strategies, boosting model fidelity and accelerating geologic insight.

Lead AR Developer - Research & Prototyping Sep. 2020 - Jun. 2022
SciHub Lab - Arizona State University

- Invented a handheld AR device that visualizes real-time magnetic fields, acting as sole hardware, firmware, and Unity developer under Nobel-laureate mentorship.
- Engineered an ESP32 to Unity bridge and directed EE + industrial-design partners to ship working prototypes, demoed to faculty and students for future research use.

XR Creative Developer - Haptics May 2021 - Feb. 2022
Next Lab - Arizona State University

- Built a Unity VR “Mars Rover” module for Dreamscape Pods with a cross-disciplinary team, syncing haptic cues to launch, landing, and ops for 300+ students.
- Co-invented “PneuTouch,” a wrist-worn haptic interface that shapeshifts for grasp feedback in VR utilizing an ESP32 co-authored a CHI ’22 paper on its haptic realism.

Freelance XR Developer Aug. 2023 - Present
Latent Vision Labs, Self-Employed

- Closed and managed XR contracts end-to-end, handling all client communications.
- Shipped two Quest 3 titles including an AR Dementia visualizer now used in caregiver training.
- Built a HoloLens-2 research prototype and an AI-driven Quest 3 MR Avatar (OpenAI + TTS)

Reality Lab Intern - AR/HCI Jun. 2022 - Aug. 2022
PTC

- Built a HoloLens-2 AR toolkit for tele-operated robots, Unity + MRTK app that incorporates live LiDAR and other sensor data into spatial guidance overlays.
- Leveraged UX and HCI principles to invent spatial cues that lower operator cognitive load and reduce obstacle collisions during AGV / robotic arm demos for R&D leadership.

Computer Science Instructor May. 2020 - Nov. 2020, Jan. 2024 - Jun. 2024
iD Tech Camps

- Taught 1-on-1 game-dev to ages 7–15, pivoting between Unity, Roblox,, C++, and more.
- Live-built mini-games and spun up custom lessons on the fly, adapting to each student.

Skills

Languages
C#, C++, Python, TypeScript, Lua, SQL, C, HLSL

XR Engines / SDKs & Frameworks
Unity (URP, XR Interaction Toolkit, Netcode), OpenXR, Meta XR SDK, MRTK, ARFoundation, ARKit, ARCore, Vuforia, WebXR (8thWall, three.js, Babylon.js)

Spatial-Data & Visualization Tools
QGIS, GDAL, Cesium, Agisoft Metashape, LiDAR, DEM, and Satellite Imagery Processing, Photogrammetry, Gaussian Splatting, Point Cloud Processing and Analysis

Networking & Services
Photon Fusion / PUN, Unity Netcode, SOA & REST APIs (.NET Core)

AI / Machine Learning
TensorFlow (model architecture training & deployment), OpenAI LLM / Whisper, ElevenLabs TTS, Computer-Vision Pipelines

Embedded & Hardware
ESP32, Arduino, C++, Sensor Integration (IMU, LiDAR), Hardware Prototyping, PCB design, IoT, Communication via USB Serial, WiFi, and BLE

Design & Prototyping
XR Interaction Design, Spatial UI/UX Research, Rapid Prototyping, Digital-Twin Pipelines, Haptics, Blender, 3ds Max, Figma

Core Competencies
Multithreaded / Parallel Programming, Data Visualization, Technical Leadership, Client Communication, Agile / Scrum

Publications

Hodges, K. V., Bardoliya, F., Das, J., Gold, L., Haehl, J., Kohl, E., LiKamWa, R., Lott, T., & Schmitt, H. H. (2024). *Improving Planetary Field Geology Research and Training Using High-Spatial-Resolution, Immersive Virtual Environments*. Presented at the AGU Fall Meeting.

Liu, F. W., Manetta, M., Kamau, G., Olson, A., Jeltes, A., Haehl, J., Lahey, B., & LiKamWa, R. (2022). *A Wrist-worn Device for Pneumatic Haptic Proxies – Touching Virtual Objects*. Presented at the Sustainable Haptic Design Workshop.

Awards

Best Project - ASU Senior Computer Science Capstone Showcase
Best AR/VR Hack - Sunhacks ASU Hackathon
Overall Winner - United Game Jam
Runner Up - Niantic VPS for Web Challenge
Third Place Alliance - FIRST Robotics Competition World Championship