

JOE M. SIDOROWICZ

LEAD XR SOFTWARE ENGINEER

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PROFESSIONAL SUMMARY

Lead XR Software Engineer and technical architect with 20 years across software, interactive 3D, and immersive technology. Architects production AR, VR, and MR platforms and leads multidisciplinary teams from customer discovery and estimation through system design, development, optimization, and deployment. Combines hands-on expertise in Unity, C#, OpenXR, multiplayer networking, spatial computing, WebGL, Azure Commercial and Government services, computer vision, and local or hosted AI integration with experience delivering training, maintenance, inspection, digital-twin, and visualization systems across defense, aerospace, automotive, and enterprise environments.

SELECTED XR LEADERSHIP & IMPACT

- **Defense multiplayer XR:** Architected reusable Quest and PC training systems for U.S. Navy and U.S. Air Force Survival, Evasion, Resistance, and Escape (SERE) programs, synchronizing full-body avatars, tracked poses, moving platforms, physics, proximity voice, and radio communications for 2–8 trainees plus scalable PC role-player, instructor, and observer support at 70 FPS.
- **Air Force Research Laboratory (AFRL):** Served as Co-Principal Investigator and Lead XR Engineer for a HoloLens 2 and PC nondestructive evaluation platform that aligned inspectors, sensors, and servers in shared coordinates and delivered real-time coverage and sensor-orientation feedback.
- **U.S. Army digital-twin optimization:** Converted a 59-million-triangle full-scale vehicle scan into a 150,000-polygon real-time asset through decimation, retopology, LOD generation, and high-to-low texture baking for high-performance VR and mixed-reality passthrough.
- **Technical and program leadership:** Led a 10-person multidisciplinary team across XR engineering, technical art, QA, and UI/UX; translated ambiguous requirements into architecture, epics, Basis of Estimate development, resource plans, sprint backlogs, and Jira execution.

CORE TECHNOLOGIES

XR & Spatial Computing: Unity, OpenXR, XR Interaction Toolkit, MRTK, Meta XR SDK, AR Foundation, ARCore, ARKit, HoloLens 2, Meta Quest 1/2/Pro/3, HTC Vive XR Elite, RealWear Navigator 520, Android phones/tablets, iPhone/iPad (iOS/iPadOS), Vuforia, VisionLib

Languages, Frameworks & Web: C#, .NET, JavaScript, Python, SQL, Node.js, WebGL, HTML, CSS, JSON, XML, REST APIs, HTTPS

Cloud & Applied AI: Microsoft Azure Commercial, Azure Government, OpenAI Responses and Speech APIs (STT/TTS), Ollama, gpt-oss-20b, Hugging Face, local LLM inference, retrieval-augmented generation (RAG), Node.js AI gateways

Multiplayer, Networking & Simulation: Netcode for GameObjects, NetworkTransform, NetworkRigidbody, Kinematic Character Controller, Mirror, WebRTC, Ardity, NVIDIA PhysX, OptiTrack Motive, Xsens

3D Graphics & Content Pipelines: Universal Render Pipeline (URP), glTF, Autodesk Maya, Autodesk 3ds Max, ZBrush, Blender, Adobe Creative Cloud

Development & Delivery: Visual Studio, Xcode, Android Studio, Git, GitLab, SourceTree, Jira, Agile sprint planning, Basis of Estimate (BOE) development, Small Business Innovation Research (SBIR) reporting

PROFESSIONAL EXPERIENCE

AVATAR Partners Inc. | Irvine, CA

Jan 2018 – Jul 2026

Lead XR Software Engineer | Apr 2022 – Jul 2026

Selected clients: U.S. Navy, U.S. Air Force, U.S. Army, Air Force Research Laboratory, U.S. Coast Guard

- **U.S. Air Force SERE — Multiplayer VR Training:** Led a Quest 3 and PC course that trained downed airmen to triangulate position using a physics-driven compass and Evasion Chart. Built reusable multiplayer architecture for full-body avatars, physics objects, proximity voice, and radio communications supporting 2 trainees, 2 PC role players, and scalable observers across Relay and closed WLANs at 70 FPS.
- **U.S. Navy — Maritime VR Trainer:** Architected a physics-driven maritime VR trainer aboard an interactive maritime craft. Built an 11-by-11-mile satellite-derived environment with meter-level geospatial accuracy, LOD terrain, buoyancy, hydrodynamics, navigation, interactive equipment, and communications.
- **U.S. Navy Security Forces — Master-at-Arms VR Simulator:** Architected a cross-platform simulator supporting 6-8 VR users plus PC role players, instructors, and scalable spectators across Meta Quest, HTC Vive XR Elite, and PC. Led a 10-person multidisciplinary team and translated requirements into architecture, epics, BOEs, resource plans, sprint backlogs, and Jira execution.
- **Air Force Research Laboratory SBIR:** Served as Co-Principal Investigator and Lead XR Engineer for a HoloLens 2 and PC nondestructive evaluation suite that registered inspectors, NDE sensors, and servers in shared coordinates while providing real-time feedback on inspection coverage and sensor orientation.
- **U.S. Army — EOD Digital Twin SBIR:** Scanned a full-scale main battle tank and reduced the fused 59-million-triangle mesh to 10 million triangles through decimation and mesh simplification, then to a 150,000-polygon real-time asset through retopology. Baked high-fidelity textures onto the optimized mesh, enabling high-FPS virtual and mixed-reality passthrough training over the physical vehicle.
- **Aerospace AR platforms:** Led reusable AR registration and content workflows that reduced model-target authoring from weeks to minutes. Built and deployed aircraft-maintenance and training application supporting actuator assembly, repair guidance, progress analytics, and on-site or remote instruction.
- **U.S. Navy Mineman IMI3 Training:** Delivered browser-based Level 2 and Level 3 Interactive Multimedia Instruction in a unified WebGL workspace with full-scale ship models, rigged and animated crew members, dynamic cameras, open-ocean environments, and interactive rope systems, enabling any-angle scene inspection without standalone 3D software.
- **Government R&D and Program Delivery:** Led customer discovery, technical demonstrations, estimation, deployment planning, and technical reporting across government R&D and SBIR programs. Authored interim and final reports for every SBIR effort led.

Augmented Reality Software Engineer III | Jan 2018 – Apr 2022

- **U.S. Air Force — Mixed and Augmented Reality for Nondestructive Evaluation - MARNE Phase II SBIR:** Led development of a HoloLens 2 mixed-reality nondestructive evaluation system combining real-time instrumentation and sensor data, equipment calibration, aircraft-component mapping, guided inspection, and persistent results across sessions.

AVATAR Partners Inc. | Augmented Reality Software Engineer III (continued)

- **U.S. Coast Guard Research Center — Maintenance and Training SBIR:** Led HoloLens 2 proofs of concept for cutter engine repair, night-vision-goggle servicing, and boat inspections. Delivered CAD/model recognition, connected and offline workflows, remote assistance, collaborative annotations, guided procedures, and interactive maintenance documents.

- **U.S. Coast Guard — Simplified Stability Test:** Created a HoloLens 2 training application that models shifting cargo and passenger weight with Unity rigidbody physics/NVIDIA PhysX to determine vessel heeling moments; designed to reduce inspector certification time by 50%.
- **Additional DoD and SBIR Programs:** Led XR development and technical reporting for U.S. Navy research programs spanning mission planning, noncombatant-evacuation object tracking, and AR aircraft-maintenance solutions.

American Honda Motor Company | Torrance, CA

Apr 2008 – Jan 2018

Senior Software Engineer, AR/VR, and 3D Animator | RyTE Pro contract

- **Mobile AR/VR Product Development:** Led Honda's first mobile AR/VR training application, enabling technicians to examine difficult-to-see repair procedures through interactive 3D component views, guided learning, and embedded instructional video.
- **Automotive Reference Guide:** Co-led a mobile technical-reference platform with 3D rotation, animation controls, and exploded-parts views using HTML5, JavaScript, CSS3, Node.js, and JSON; created a repeatable Flash-to-mobile conversion process.
- **Program and content leadership:** Managed 10 concurrent HTML5 projects, coordinated 4 3D illustrators and 5 developers, and designed and developed 120+ Honda and Acura service-education modules. Produced safety and service video content for complex automotive systems.

EARLIER EXPERIENCE

Wire Stone / PropelAR | Los Angeles, CA | Senior Unity Developer, AR/VR/MR | 2017 project engagement:

Built HoloLens mixed-reality proofs of concept for Boeing's 777X internal use and the 737 MAX display at the 2017 Paris Airshow in collaboration with Microsoft and Boeing; delivered a Cartier video-wall experience for the brand's 100th Anniversary Savoir Faire celebration in New York.

Sirahu | Equine.com and Automotive.com | Flash Developer | 2007–2008: Developed the winning Purina Mills microsite approach and built interactive educational experiences for Purina, Harley-Davidson, and Chrysler, working directly with clients on short timelines.

Orange County Sanitation District / TEKsystems | Fountain Valley, CA | Flash Developer | 2007: Developed an interactive Flash video presentation supporting a Human Resources succession-management program and executive promotion.

El Clasificado | Norwalk and Los Angeles, CA | IT Coordinator / Supervisor, Flash Developer, Web Designer | 2006–2007: Upgraded the Alborde music-magazine website, helping grow monthly traffic from a few thousand visits to 200,000.

EDUCATION

Loyola Marymount University | Bachelor of Arts, Computer Animation | December 2005