

ARNOLD LOPEZ

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PROFESSIONAL EXPERIENCE

Expert Generalist (Independent Contractor) | Mercor Intelligence

Sep 2026 – Present

Remote | AI-generated presentation evaluation

- Evaluate and rank AI-generated presentation slides against detailed rubrics covering prompt requirements, visual hierarchy, layout, readability, consistency, and overall design quality.

Interactive Simulation Programmer | Engineering & Computer Simulations

Jun 2022 – Aug 2025

Ballston Spa, NY | Navy reactor-servicing virtual training

- Designed, implemented, and tested core systems for three major Unity-based virtual training products used to teach procedural equipment operations.
- Developed a GPU-based rope-physics system, improving performance stability and increasing prototype frame rate from approximately 90 to 120 FPS.
- Implemented networked VR tool and equipment interactions with Unity, Mirror Networking, and XR Interaction Toolkit for multi-user training scenarios.
- Maintained reusable Unity packages and shared systems across multiple training products and investigated automated performance profiling for Azure DevOps CI pipelines.
- Built and deployed a standalone Python tool that automated cybersecurity STIG configuration work, reducing a repetitive compliance workflow.

Graphics Software Engineer | Leidos

May 2018 – Jul 2021

Rockville, MD | Real-time periscope simulation

- Designed and implemented an OpenGL compute-shader particle system and standalone node-based particle editor using C++, Qt, CMake, and CPack.
- Diagnosed rendering defects across atmospheric sky, ocean simulation, post-processing, and particle pipelines, improving visual fidelity and runtime stability.
- Integrated SteamVR and OpenVR headset tracking into networked systems to provide synchronized VR interaction and visualization.
- Collaborated with artists and engineers to translate visual requirements into maintainable real-time rendering and authoring-tool workflows.

iOS Application Developer | Mobile Consulting Solutions

Jun 2017 – Jan 2018

Atlanta, GA | Commercial aviation training application for Gulfstream pilots

- Implemented production Swift UI features and maintained airport and runway datasets using SQLite and Jeppesen source data.
- Collaborated with engineers, designers, and QA in an agile team to test, debug, and deliver reliable releases for an operational aviation-training application.

Game Programmer | Incredible Technologies

Sep – Nov 2016

Vernon Hills, IL | Golden Tee Golf Mobile

- Contributed gameplay logic, UI features, scripting, and testing to a shipped commercial mobile game.

SELECTED PROJECTS

ForgeSim | Modern C++ real-time simulation and game-engine framework

- Developed a modular C++20/OpenGL engine with CMake, fixed-timestep scheduling, platform-independent input, and interactive camera navigation.
- Implemented a metallic-roughness PBR pipeline with direct and image-based lighting, HDR environment maps, exposure control, and tone mapping.
- Built glTF 2.0 scene loading supporting multiple meshes, material textures, node hierarchies, and generated normals and tangents.
- Created interactive tools using Dear ImGui, including object selection, transform editing, rendering controls, debug visualization, and GLSL shader hot reload.

EDUCATION

B.S. Computer Game Development | DePaul University, Chicago, IL

2015

TECHNICAL SKILLS

Languages: C++ (C++20), C#, Python, Swift, Lua

Engines & Simulation: Unity, Unreal Engine, XR Interaction Toolkit, Mirror Networking, OpenSceneGraph

Graphics & Profiling: OpenGL, GLSL, HLSL, Dear ImGui, PBR / image-based lighting, compute shaders, NVIDIA Nsight Graphics

Tools & Delivery: Qt, CMake, CPack, Git, Azure DevOps, Unity Test Framework, SQLite