**Richard Palacio**

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**OBJECTIVE**

Seasoned software engineer specializing in computer graphics, rendering, shading, and game engine development. Seeking a position to leverage my expertise in advanced graphics techniques and engine optimization, contributing to innovative and immersive gaming experiences.

**WORK EXPERIENCE**

**Daybreak Game Company, LLC** Jul 2021 - Aug 2024

**Senior Software Engineer, Graphics**

* Shader bug fixes, post-processing effects, water caustics, tessellation, PBR lighting, AMD FSR 1.0, PCF filtering
* Improved in-house engines: reverse-z depth, pipeline stages, LOD texture loading, animation loading, viewport rendering
* Enhanced PS4 performance with Razor debugging and crash analysis tools

**Consolidated Wonder** Apr 2020 - Mar 2021

**Director of Engineering**

* Scoped, designed, developed and analyzed PiP streaming of live streaming with multiple secondary camera outputs (Similar to UE Pixel Streaming)

**Kuma Reality Games** Apr 2013 - Mar 2020

**Game Programmer**

* Server-client communication, remote debugging
* IP routing, firewalls, DNS, TLS/SSL, SSH
* Maintained version management infrastructure (SVN, Git) and CI / CD systems (Jenkins, JIRA, Bitbucket, Confluence)
* Backup and recovery strategies for MySQL databases, and RabbitMQ message broker

**Tournament One Corp.** Dec 2010 - Mar 2013

**Game Programmer**

* Designed immersive and complex gameplay systems, libraries, and innovative UI solutions
* Simulated inelastic collisions, Perlin noise, and kinematics for projectile motion

**OnlineWorlds.Org** Sep 2009 - Dec 2009

**Intern**

* Refactored legacy MUD title in collaboration with team members

**AAA Games**

* Planetside 2, Lord of the Rings Online, Dungeons and Dragons Online

**TECHNICAL SKILLS**

**Languages, Rendering Techniques, and Graphics Technologies**:

* C/C++, DirectX, OpenGL, HLSL, GLSL, PSSL, Win32API, DXGI, COM, Orbis OS, Graphics pipeline, Compute pipeline, Vertex Shaders, Geometry Shaders, Pixel Shaders, Compute Shaders, Signed Distance Field (SDF) text rendering

**Software**:

* Visual Studio, RenderDoc, NSight, PIX, Razor GPU/CPU, Git, SVN, Jenkins, Jira, Bitbucket, CMake, WinDbg, 3DS Max

**Engines**:

* Turbine G3, ForgeLight

**PROJECTS**

* Graphics Engine: Created a custom graphics engine, implementing forward rendering, culling, clipping, and .obj file parsing.
* 3D World: Developed a custom C++ graphics engine with DirectX and HLSL, featuring deferred rendering, a PBR workflow, advanced BRDF models (GGX, Smith geometry, Schlick Fresnel), and SIMD-optimized vector/matrix operations.
* VFX Particle System: Implemented confetti cannon and fire effects in C with OpenGL and GLSL.
* WebGL Borderlands Render: Created Gouraud Shading with Phong lighting rotating about a point light in a cylindrical coordinate system.

**EDUCATION**

**Binghamton University, SUNY** | Bachelor of Science, Computer Science Sep 2007 - Dec 2010

**University of Colorado Boulder** | Advanced Computer Graphics (Graduate-Level Non-degree Course) Jan 2015 - May 2015

**RELEVANT COURSES**

Advanced Computer Graphics, Linear Algebra, Calculus, Physics, GUI/Windows Programming, 3D Animation

**MILITARY** Honorable Discharge

**U.S. ARMY** 9/99 - 9/02