Alexander M. Lemke

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**Skills**

* Team leadership, communication,
* Proficient in C++, C, C#, HLSL and GLSL programming languages.
* Experience with DirectX, Vulkan, GDK/XDK, Unreal, OpenGL, PIX, Razor, RenderDoc, Perforce, Git, ImGui, Bink, Scaleform/Scaleform Video, XNA, C++/CLI, Objective-C, Havok Vision Engine, Unity, iOS, LUA/Swig, 68000 assembly, MYSQL and Python.

**Tools**

* Proficient in C++, C, C#, HLSL and GLSL programming languages.
* Experience with DirectX, Vulkan, GDK/XDK, Unreal, OpenGL, PIX, Razor, RenderDoc, Perforce, Git, ImGui, Bink, Scaleform/Scaleform Video, XNA, C++/CLI, Objective-C, Havok Vision Engine, Unity, iOS, LUA/Swig, 68000 assembly, MYSQL and Python.

**Experience**Senior Software Engineer: Respawn Entertainment: Seattle, WA: (Sept 2022 – Present)

**Star Wars FPS (Xbox Series (S/X)/PS5/PC)**

* Setup post process pipeline and render functionality for highlighting objects for gameplay and accessibility features.
* Added additional debug view functionality and stat tracking. Implemented and worked additional features as needed such as decals, additional emissive support and micro shadowing.
* Assisted with stability and performance efforts.
* Helped in interviewing process, reviewing take home tests and acted as a mentor for an intern.
* Helped drive Unreal engine upgrades, resolving compile and linker errors and forwarding issues to the necessary parties.

Senior Software Engineer: 343 Industries: Redmond, WA: (Aug 2017 – Sept 2022)

**Halo Infinite (Xbox One/Xbox Series (S/X)/PC)**

* Subteam graphics lead for the characters vehicles and weapons team. Lead other engineers, set up timetable for tasks and goals, worked with art team to drive towards their customization goals and help manage external contractor efforts. Implemented a layered material system for artists allowing the assembling of a final material from premade layers and extended the system to support Forge objects. Set up render only objects for customization attachments and helped maintain art tools.
* Setup eye shading with iris refraction, fake caustics and additional customization features for cinematic moments.
* Updated dynamic decals to use a clustering approach for better performance and to avoid clipping issues. Updated existing static decals during engine transition from forward to deferred rendering.
* Implemented wetness options for environment surfaces, including albedo darkening, puddling effects and tiled directional flow maps.
* Helped with general performance, stability, code usability efforts and tracking down TDRs. Helped hook rendering paths into texture and mesh streaming systems, setting up async compute for certain effects and assisted in porting from DX11 to DX12.

Software Engineer: Electronic Arts Tiburon: Orlando, FL: (Dec 2012 – Aug 2017)

**NBA Live 14, 15, 16, 18 (Xbox One/PS4)**

* Improved marco ambient occlusion between characters by using screen space binning.
* Implemented stadium visual/performance improvements including ribbon board light baking and lens flares.
* Worked with UI, Art and Design teams to deliver create-a-player feature set. Owned hair wrap deformers, texture composting, and runtime GameFaceHD rendering systems.
* Sped up iteration time of artists and engineers by implementing shader/texture reloading and being able to remove superfluous assets.
* Setup runtime support for driving player clothing/gear colors from a database.

**Spare Time Projects**

* Implementing a DX12 and Vulkan bindlless rendering system, currently looking into RTX and mesh/amplification shaders. Setup several shadertoy examples involving PBR, signed distance fields and ray tracing.

**Education**

* **University of Central Florida’s FIEA Program: Orlando, FL: (2011- 2012)**

M.S. in Interactive Entertainment (Programming)

* **University of Dayton: Dayton, OH: (2007–2011)**

B.S. in Computer Science