Christopher Pugh

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https://github.com/VirtuosoChris

Experienced C++ graphics programmer and game developer looking to solve interesting problems and create innovative games. Eager to join a dynamic team and collaborate with talented peers.

Skills:

- Experienced C++ programmer, API designer, 3D engine developer, and game maker
- Extensive real-time graphics programming experience using OpenGL and GLSL, including mobile rendering. Includes: streaming, culling, compression, and LOD of large texture and geometry datasets, IBL, and ray tracing
- Performance tuning and debugging with tools like RenderDoc, GPUView, and VTune, as well as custom tools
- Game and software development using various languages/tools/engines/platforms including : Unreal, Godot, Unity, PhysX, OpenSceneGraph, Panda3D, Irrlicht, iOS, Android, GearVR, GLSL Shaders, C#, Java, GDScript, Python, Objective-C, Javascript, Articy Draft, Yarn Spinner, WPF, and CMake build system
- Source control with Git / GitHub, PlasticSCM, SVN, and Perforce

Career History:

May 2023 – Present

Independent Game Developer

- Created prototype of "*Killing Baby Hitler*", a Wolfenstein-inspired sprite based retro "Boomer Shooter" FPS on a custom C++ / OpenGL engine
  - Gameplay trailer : https://www.youtube.com/watch?v=QDfS3aJYwFk
- Re-architected Coquito Games game prototype into production code as part of a team. Established programming standards and style as part of a team to implement iterative design changes
- Established workflows and communicated technical requirements to consultants and cross-disciplinary teams
- Created and modified custom tools, and implemented features based on artist feedback
- Consulted on games and other software with third party teams, using various engines, platforms, and languages, including : Unreal, Unity, Godot, GDScript, C#, C++, Android, iOS, and Java
- Performed tasks such as multiplayer code, game AI, optimization, debugging, developing save game systems, gameplay code, shaders, and other VFX
- Performed non code tasks including writing, music composition, sound effects, and level design

May 2014 – April 2023

AMD (Workstation OpenGL Driver Engineer)

- Developed and ported optimizations to AMD's recently released OpenGL on PAL driver as part of a team
  - New driver improved performance in key applications by up to 72%.
- Designed and implemented major refactor of the legacy driver's multithreading model
- Designed and implemented many driver performance optimizations based on data from profiling tools
- Troubleshooted hardware hangs for new hardware bringup with kernel mode debugging, scan dumps, command buffer disassembly, and other internal tools and processes
- Communicated with external Independent Software Vendors (ISVs) to advise them on state-of-the-art graphics algorithms with best performance and compatibility on our hardware
- Maintained legacy software and tools, investigated and resolved bug reports from customers and ISVs

Spring 2011 – Fall 2013

UCF Computer Graphics Lab

- Built new OpenGL rendering libraries for streaming and visualization of large urban scenes using ray-casted impostors
- Added multithreading, streaming optimizations, and other optimizations to the existing software

Fall 2010 - Summer 2011

UCF School of Visual Arts and Design

- Developed GUI tools, shaders, and other support code to add lighting, camera, and other graphics features to the Panda3D engine project
- Developed AI pathfinding, finite state machines, and other game logic
- Co-designed an experimental AI to represent and change the emotional state of the game characters

Other Projects and Hobbies:

- Created the Youtube show "Making Games By Year" (2019)
- Created and released the GearVR app "Fireworks Show VR" (2017)
- Co-developed other apps including a location based election canvassing app (2016) and an iOS photo app (2014)

Education:

Computer Science, University of Central Florida (2006-2013)

- Enrolled in the MSCS Graduate Program from 2010-2013
- Graduated with a Bachelor's in Computer Science in 2010
- Graduated Honors in the Major with thesis entitled *"Real-time rendering and modification of scenes with complex materials"*