

Steve Karolewics

www.stevkarolewics.com

skarolewics@gmail.com

- Experience**
- Unannounced Game Project** Apr. 2019 – Present
Graphics Engineer, Monolith Productions
- Upgrade lighting and shadow systems
 - Collaborate with lighting and fx teams to improve workflows and add new features and debug tools
- RenderDoc** June 2019 – Present
GitHub Contributor
- Implemented D3D12 DXBC shader debugging for vertex, pixel, and compute shaders
 - Added support for Shader Model 5.1 binding model and bindless resources
- The Grand Tour Game** (Xbox One, Playstation 4) Sept. 2017 – Mar. 2019
Senior Graphics Engineer, Amazon Game Studios
- Implement 2 – 4 player split screen rendering which is 40% faster than naïve multi-viewpoint approach
 - Design and build frame-perfect occlusion culling system for up to 4 viewports in under 1ms on consoles
 - Adjust and optimize tiled deferred lighting to support split screen and reduce cost on console by 1.5ms
 - Create anti-ghosting temporal antialiasing solution to support fast car motion with minimal artifacts
 - Support lighting and environment artists by accelerating workflows with new shaders or features
 - Optimize rendering and simulation performance on console, resulting in up to 70% frame time reduction
- Lumberyard** (PC) Mar. 2017 – Sept. 2017
Graphics Engineer II, Amazon Game Studios
- Implemented and shipped fur rendering feature for Lumberyard, demoed at SIGGRAPH 2017
 - Supported tiled deferred rendering with anisotropic specular highlights and subsurface scattering
 - Enabled fur detail to appear in shadow passes and simulated self-shadowing on fur
- Unannounced Game Project** (PC) Aug. 2015 – Mar. 2017
Software Engineer II, Amazon Game Studios
- Collaborated with environment artists to improve terrain workflows and reduce iteration times by days
 - Added particle system feature enabling particles to follow splines authored at edit time or runtime
- Elly Cooper and the City of Antiquity** (PC) Nov. 2014 – Aug. 2015
Developer, Sobai Games
- Worked with art director and programmed shader to display transparent video without custom codec
 - Identified ways to reduce build size via compression and asset optimization, resulting in 60% reduction
- Unannounced Game Project** (PC) Oct. 2013 – Aug. 2015
Lead Developer, Indreams Studios
- Drove development of a 2D physics-based puzzle platformer created with Unity
 - Created shaders to enable realistic lighting and shading for 2D sprites
 - Implemented input recording/playback system to easily reproduce bugs found in playtesting
- Minecart Madness** (Windows Phone) Mar. 2011 – Jan. 2013
Lead Developer, Indreams Studios
- Designed a procedural level generator for an infinite runner supporting multiple difficulties
 - Wrote custom 2D physics engine supporting vehicles on curved surfaces
- Microsoft Office** (PC, Android) June 2010 – July 2015
Software Engineer II, Microsoft
- Implemented Direct2D rendering support for images, shapes, and printing
 - Developed software rasterization components for Office on Android
- Education**
- Bachelor of Science in Computer Science**
Bachelor of Science in Mathematics
The Pennsylvania State University, University Park, PA, USA
- Skills**
- Programming: C/C++, C#, Python, HLSL
Engines & APIs: Direct3D 11, Direct3D 12, Lumberyard, Unity3D, XNA