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## Michael Pohoreski

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I have 13+ years of programming in the video game industry having shipped 10 games on the following platforms: PC, PlayStation 1 & 2, Nintendo DS, Apple 2, and Wii; additionally I have worked on the PS3, PSP, Vita, and Xbox360 platforms. My roles have included Technical Lead, Engine, Gameplay, and Tools programmer.

I am passionate about graphics, optimization, User Interface, frame rate, and Data-Orientated Design.

I would love to bring my skills to your company!

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### Technical Skills

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| <b>Specialties</b>      | Graphics, optimization, UI/UX design & implementation             |
| <b>Languages/APIs</b>   | C++, GLSL, JavaScript, C, OpenGL & ES, WebGL, Win32, OpenMP, CUDA |
| <b>Apps &amp; Tools</b> | Git, VisualStudio, Vim, Photoshop, Blender, Substance Painter     |

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### Work Experience

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| 2019-2022 | <b>Senior Graphics Programmer</b> , Linden Research Inc. (Second Life) <ul style="list-style-type: none"><li>Implemented Physically Based Rendering (PBR) with IBL (Image Based Lighting),</li><li>Performance analysis integrating RAD Game Tools' <i>Telemetry</i> then <i>Tracy</i> profiler,</li><li>Maintained and fixed legacy OpenGL rendering code base, and</li><li>Worked with 3<sup>rd</sup> party developers to submit and merge patches back upstream to SL.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 2011-2019 | <b>Senior UI Developer</b> , Comcast <ul style="list-style-type: none"><li>Worked on <i>Xfinity Stream Beta App</i> for SmartTVs, Tablets, STBs in JavaScript.</li><li>Next generation UI engine which involved researching, designing and implementing:<ul style="list-style-type: none"><li>WebGL 1.x rendering pipeline to augment DOM, easing animation system (21 dimensions, Signed Distance Field font rendering and texture atlas.</li><li>C++ OpenGL ES rendering engine for embedded Broadcom 742x systems.</li></ul></li><li>Wrote JavaScript minification C++ toolchain and debugged minified code.</li><li>Logged telemetry using Localytics, Splunk and internal backend systems.</li><li>Ran Splunk queries and did analysis of logs.</li><li>Communicated with team about git, git bisect, history of graphics, and telemetry.</li><li>Helped colleagues with Xbox 360 streaming app. in C#; ported to PS3.</li></ul> |
| 2009-2011 | <b>Senior Software Engineer</b> , Sony Computer Entertainment of America <ul style="list-style-type: none"><li>Analyzed code and assembly, fixed bugs, and added features to PS3, Vita and PSP C++ compilers for developers. Presented road map of tools and debugger usage to game developers. Ported <i>Bullet</i> (open source physics library) to PSP.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 2008-2009 | <b>Senior Software Engineer</b> , Majesco Studios <ul style="list-style-type: none"><li>Developed C++ in-house game engine for Nintendo DS including UI, font rendering, savegame; optimal palette usage; wrote conversion tools; scripting of version control for assets, build system for multiple SKUs.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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- 2006-2008    **Senior Software Engineer**, Papaya Studios
- C++ Wii in-house game engine architecture and implementation for CPU and GPU:
    - Ported PS2 game engine to Wii; CPU profiling, vector & matrix optimizations.
    - Implemented subset of OpenGL, GPU profiling, full frame VFX, projected shadows, movie shaders, full frame and per object glow (bloom), implemented 8-bit palettized textures with 32-bit CLUT using 4 TEV stages, optimized 2-bone skinning, dynamic lighting using *Havok* physics middleware, swizzled textures.
  - C++ PS2 rendering fixes, per object glow, VU and GS analysis, 4-bone skinning.
- 2003-2006    **Independent Computer Consultant**
- Produced catalog using InDesign and Photoshop; purchasing advice for hardware.
- 1999-2003    **Senior Software Engineer**, Cyberlore Studios
- C++ PS2 development of in-house rendering engine before using “*RenderWare*”.
    - Implemented projected texture shadows using “*RenderWare*” middleware.
    - Integrated “*Multistream*” middleware sound and streaming library.
    - Optimizations: CDROM/DVD loading into EE memory, movie memory usage.
    - Gamepad, memory card, and timer support.
  - Implemented Particle Systems, math optimizations for vectors, matrices, and quaternions.
  - Random Number Generator conformance.
  - Extended in-house scripting language to control 3D units and camera for cutscenes.
  - Wrote a PC renderer engine using D3D8 replacing *SurRender* D3D5 middleware.
- 1997-1998    **Senior Software Engineer**, Appleton Industrial Software
- Designed & implemented Real-Time handwriting recognition in C++ for WinNT 4.0.
- 1996-1997    **Teaching Assistant**, Simon Fraser University
- CMPT 001: Computers and the Activity of People.
  - CMPT 098: Computers, Applications and Programs; graded final exams.
- 1995-1996    **Junior Software Engineer**, Electronic Arts Canada
- Implemented UI, profiling, memory usage & crash analysis, profiling, and memory card support on *Need For Speed* (PS1).

## Education

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**Bachelor of Science, Computing Science**, 1997  
Simon Fraser University, Burnaby, BC, Canada

## Personal Projects

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- WebGL shaders at <https://www.shadertoy.com/user/MichaelPohoreski> including:
  - *HOWTO: Ray Marching, Font: Bitmap vs SDF*, etc.
- *Buddhabrot* – OpenMP (done) and CUDA (Work-in-Progress)
- *World’s smallest 3x4 readable font* at <https://github.com/Michaelangel007/nanofont3x4>
- *AppleWin* – Open source Windows Apple IIe emulator (Debugger & Video)