

## **Russell Klenk**

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## **Professional Experience**

**IBM Watson Health Imaging - Senior Software Engineer, August 2014 to Present**  
San Diego, CA (Remote)

Work as part of the Unity PACS team developing Class II medical imaging software. Played a key role in optimizing image loading, playback and decompression. Port existing legacy software to 64-bit. Implement custom debugging and profiling tools and analyze memory dumps from the field. Work with the Professional Services and Implementation teams, and when necessary, directly with radiologists and PACS administrators, to diagnose and resolve performance and stability issues.

*Environment:* Windows, C, C++, C#, Java, SQL Anywhere, WinDbg, Event Tracing for Windows, FDA Class II regulatory.

**Real Deal Interactive - Contract Software Engineer, March 2015 to June 2015**  
San Diego, CA (Remote)

Assisted with client and server-side game development on casino-style mobile games for iOS and Android. Implemented support for bolt-on bonus games, as well as client and server implementation for in-game competitions.

*Environment:* macOS, Lua, node.js.

**Ivey Poker - Senior Software Engineer, March 2014 to July 2014**  
San Diego, CA (Remote)

Responsibilities included leading client-side development on a social poker platform supporting native desktop, Facebook, Android and iOS clients, working with artists to determine methods for content integration and support for multiple aspect ratios, and working with management to define deliverables and objectives.

*Environment:* macOS, ActionScript w/Stage3D, Objective-C, Java.

**Bally Technologies - Senior Software Engineer, July 2013 to March 2014**  
San Diego, CA (Remote)

Responsibilities included supporting game developers by implementing new game features and tools for the core game platform and OS. Optimized the asset build pipeline to decrease build times by 27x.

*Environment:* Linux-based embedded platform, C++, Python, Casino Gaming Class III regulatory.

**Scientific Games - Contract Software Engineer, October 2012 to July 2013**  
Las Vegas, NV (Remote)

Performed contract game and tools development and implemented new system-level features such as jurisdictional win limiting.

*Environment:* Windows, C++, C#, Casino Gaming Class III regulatory

**Leap Forward Gaming - Contract Software Engineer, June 2012 to May 2013**  
Las Vegas, NV

Implemented a mystery jackpot bonus and multi-level progressive controller in JavaScript along with a gaming RNG and associated regulatory verification and test tools. Provided customer support and on-site hardware installation when needed.

*Environment:* Linux-based embedded platform, node.js w/custom V8 extensions, C++, C#, PostgreSQL, WebGL.

## **International Game Technology - Staff Software Engineer, May 2007 to June 2012**

6355 S. Buffalo Drive, Las Vegas, NV

Responsibilities included prototyping game and systems concepts, and researching methods for improving the existing game platform and game development process. Later promoted to a team lead role, managing a small team of engineers and content developers working on a web-based games platform for casino-style, casual and skill-based games.

*Environment:* QNX-based embedded platform, Windows CE and Windows XP embedded platforms, C, C++, ActionScript, Java, C#, Casino Gaming Class III regulatory.

## **Progressive Gaming - Senior Software Engineer, September 2004 to May 2007**

920 Pilot Road, Las Vegas, NV

Responsibilities included maintaining, supporting and improving the existing legacy code base, implementing new game play technology, implementing game designs and supporting games through their entire lifecycle and ensuring they met applicable regulatory requirements. Worked closely with other engineers and artists to realize game concepts. Implemented (Windows) device drivers for custom hardware.

*Environment:* vxWorks-based embedded platform, C, C++, C#, Windows XP embedded platform, kernel device driver development for custom I/O, NVRAM and system watchdog, user-level drivers for RS-232 bill validators and thermal printers, Casino Gaming Class III regulatory.

## **Education**

**University of Nevada, Las Vegas, 1999 through 2001**

Targeting a B.S. in Computer Science while working full-time. Left to pursue startup opportunities.

## **Other Experience**

- V8 JavaScript engine extension development using C++.
- GPU programming with OpenGL, Vulkan, OpenCL and CUDA.
- Embedded software development for QNX, vxWorks, Linux, Windows CE, and Windows Embedded platforms with various combinations of resource constraints (CPU, RAM, GPU) and having high reliability requirements.
- Experienced working in highly regulated environments (FDA/Medical and Casino) and working with regulators and regulatory approval processes.
- Completed Machine Learning by Stanford University on [Coursera](#) 2017-12-02.

## **Patents**

- David Kern, Jr. Eric B. Petersen, Kevin Higgins, Russell Klenk, Danny Miles, William Chad Little, 2012. Using a Message-Oriented Protocol in a Gaming Machine. U.S. Patent Grant US9558618B2 2017-01-31.

## **Significant Personal Projects and Sample Code**

- Implemented the techniques described in the paper [Resolution-Independent Curve Rendering Using Programmable Graphics Hardware](#), by Charles Loop and Jim Blinn.
- GitHub: <https://github.com/russellklenk>
- content.js, a Node.js game content pipeline: <https://github.com/russellklenk/content.js>
- PAL, a data-oriented platform layer: <https://github.com/russellklenk/PAL>