HOWARD C. ROSENORN

1822 Forest Bend Lane, Keller, Texas 76248 ✉ hrosenorn@gmail.com

QUALIFICATIONS PROFILE

Innovative, performance-focused, and highly analytical professional, offering broad range of experience in software engineering, embedded development, 3D graphics, and physics simulation. Equipped with solid expertise in software design, full stack development, shaders, tools, hardware drivers and database. Skilled in creative and visual arts, audio/video technology and modeling. Articulate communicator with well-honed interpersonal skills essential in collaborating and building relationship with various individuals. ***Previously held Security Clearance.***

CORE COMPETENCIES

Linux System Development ~ Data and Application Architecture ~ Rapid Problem Resolution
Strategic Planning and Implementation ~ System Management and Maintenance ~ Patterns and Connections Identification

PROFESSIONAL EXPERIENCE

Smart Start Inc, Dallas, TX
Software Engineer May 2018 – Current

- Developed web based tools.
- Firmware development on Rtos and embedded Linux
- Developed C++/Python related tools
- Design and implement a custon build server

Lockheed Martin, Grand Prairie, TX
Contract Software Engineer October 2016 – April 2018

- Create and debug geospatial features for propitiatory code base in C++, C#, and CLI.
- Perform research and development of new features for next generation of geospatial software
- Write and debug code base in Java, JavaScript, AngularJS, NodeJS, and HTML for web front-end and server back-end for battery storage
- Extended REST API by adding new features to the server back-end

Eagle Design Studios, Fort Worth, TX
Contract Software Engineer May 2016 – August 2016

- Debugged current titles and developed new titles in Unity3D, C# and .net
- Redesigned game platform and rendered strategic guidance in modernizing and debugging current game titles
- Improved usability and resolved field-related problems by rewriting bill acceptor drivers in C++, C#, and .NET
- Implemented cutting-edge game designs to be applied on redesigned game platform
- Provided key insights in modernizing and debugging current game titles

Scientific Games (Formerly WMS Gaming), Chicago, IL
Principal Level II Software Engineer March 1998 – February 2016

- Created shaders that produced enhanced visual effects and minimized required art assets
- Developed physics simulation tool for record and playback of specific outcomes as animations
- Embedded software development on a 8, 16, 32 & 64 bit chip in C, C++ and assembly to deploy on a proprietary and Linux OS
- Improved visual appeal, boosted productivity, and strengthened edge against competitors by developing custom tools and featurettes which can be used by other game developers to easily adopt common features for a specific product brand
- Enhanced developer productivity and visual appeal of the final product through the implementation of a 2D animation engine for an embedded platform
- Designed games and featurettes on a proprietary, Linux and Unity3D platforms in C, C++, Assembly, C#, Python, Lua, Perl, Bash Scripts, and .Net
- Demonstrated expertise in developing more than 20 top-seller games, as well as these well-known titles in the industry:
    - *Reel of Riches progressive game and featurette;*
    - *Lord of the Rings bonuses and featurettes;*
    - *Star Trek games;*
    - *Price is Right–Any Number– game with three independent reel groups;*
    - *Monopoly Party Train game;*
    - *Highly-animated Lucky Meerkats game*

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PROJECTS HANDLED

Project Name: **DIIRT** (Desktop Ignition Interlock Regression Tester)
Role: Software Engineer / Full stack
Software Used: C++, Python, Rest API, Database
Objective: Debug, Extend and add features

- Continue development on software that controls custom device for testing interlock firmware
- Full stack development on web related tools for capturing and analizing test data saved to database
- Add firmware support for binary patching
- Embedded Linux development with Bitbake Yocto for Nordic processors

Project Name: **TopScene Project**
Role: Contract Software Engineer
Software Used: C++, C#, and CLI
Objective: Modernization of geospatial software through osgEarth implementation

- Devised bug fixes and added customer-required features to the propitiatory geospatial software, including integration of osgEarth to eliminate the legacy ROAM implementation
- Redeveloped legacy shaders to be used in osgEarth's shader composition format, which involved utilization of legacy code to calculate the data passing in the shader
- Drafted code to load environmental objects (trees, building, and vehicles) from a SQLite database to be positioned on osgEarth execution to take full advantage of installed base of graphical assets

Project Name: **Energy Storage Project**
Role: Contract Software Engineer
Software Used: Java, JavaScript, Scala, HTML, and AngularJS.
Objective: Designing of new features and hardware drivers

- Initiated efforts in meeting and surpassing scrum points and deadlines by efficiently debugging Java, JavaScript, and HTML code
- Conceptualized and created a custom Linux platform to change the current Window-based platform to be used as their web server, thus saving money for each installed base and enabling more flexibility and custom features
- Deployed dynamic web configuration page that enabled easy customization of installed base through web interface, thus simplifying its maintenance

Project Name: **Game Development Projects**
Role: Principle Level II Software Engineer for WMS Gaming
Software Used: C, C++, C#, Assembly, .NET, Python, Lua, Perl, Bash Scripts, and Unity3D
Objective: Creation of games with an engaging experience and develop tools to enhance productivity

- Developed physics simulation tool for recording and saving outcomes as key frames on later playback to provide the illusion of random movement to control final outcome
- Implemented a software rendering 3D engine on an embedded, 16-bit proprietary OS
- Conceptualized new architecture for multiple reel groups to be played in a single game which enabled new games to easily deploy this feature
- Displayed proficiency in developing over 20 unique game titles, 5 featurettes, and a multitude of developer tools

EDUCATION

Coursework in Liberal Arts, Triton College, River Grove IL

PROFESSIONAL DEVELOPMENT

Agile and Unity3D Training Courses

ACTIVITIES

Game Engine Development

- *Vulkan Game Engine in C++*
- *WebGL Game Engine in Javascript*
- *DirectX Game Engine in C++*
- *OpenGL Game Engine in C++*
- *Vulkan, OpenGL & DirectX shaders*
- *Android Development in NDK/C++ and Java*
- *Software Rendering Engine in C++/Assembly*
- *Wrote a physics engine in C++*
- *Wrote a particle engine in C++*
- *Integrated Box2D for 2D game physics*
- *Integrated Bullet3D game physics*
- *AngelScript for Game Element Scripting*
- *Written Client and Server Socket Code*
- *Shadow Mapping to DirectX 3D Engine*
- *Custom Scripting Engine for animation and motion*
- *Post-processing Shader to blur and color drain the screen*
- *Gimp Plug-in to create Sprite Sheets in Python*
- *Used Unity3D to create a game demo for the OUYA console*

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TECHNICAL ACUMEN

Languages	C++ (03, 11, 14, 17 & 20) | C (99 & 11) | Assembly | Python | Java Script | C# | Java | Lua | CLI | Perl | Bash Scripts
Development Environment	Microsoft Visual Studio | VS Code | MatLab | Unity3D | Jenkins
Version Control Systems	CVS | SVN | Git | Perforce | Microsoft Team Foundation Server
Project Methodology	Agile
Libraries	Vulkan | DirectX | OpenGL | STL | Boost | Flask | pyqt | pysvn | XlsxWriter | SDL2 | AngelScript | Box2D | Bullet Physics | xACT | QT | AngularJS | Node.js | .NET | Java Framework | OSG | osgEarth