Ron Hardock

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Objective

I am seeking a full or part-time position in the field of Software Development.

Personal Profile

A senior software developer with extensive experience in all aspects of the software development process. This includes talking to users to understand their problems and gathering requirements, creating estimates, design of the solution and writing specifications, developing the solution, testing, and final delivery to the customer. My primary interest is in the development of an application's graphical user interface and the underlying functionality. My primary motivator is in helping users by providing solutions that address their problems and improve their workflows. Passionate for taking on new challenges and lifelong learning in the fields of technology and science.

Highlights

Had a research paper based on geometric continuity accepted and presented at the SIGGRAPH computer graphics conference in Boston in 1989.

Over 26 years of experience as an application software developer (primarily C/C++) on the Alias CAID software product, with emphasis on User Interface, NURB (mathematical) curve and surface construction/manipulation, geometric continuity, 3D/2D computer graphics, and data transfer.

16 years of experience working as a developer in consulting engagements for customer-driven enhancements to Alias.

The sole developer responsible for Creative Bridge and Opticore Visualizer for over 6 years. Creative Bridge is a data translation batch processing engine (Java based) in combination with a Maya plugin (Python based). Opticore Visualizer is a part/assembly viewer (using C++, Cosmo, and Qt) with an emphasis on the creation of images for documentation purposes.

Designed and developed the Creative Vault proof of concept which later became the product Autodesk Studio Wall.

Developed the UI and command-based architecture for a visualization solution for a major shoe customer built on top of MotionBuilder and using Scaleform and Flash.

Designed and developed an approach to encrypt a Maya plugin and migrate it from Python to C++.

Technical skills

Languages

- Proficient in: C/C++, Python, and Java
- Familiar with: HTML, CSS, Javascript, Jython, C#, MySQL, PHP, Drupal

Software & Technologies

- APIs: Qt, Cosmo, Alias, Maya, DirectConnect, 3ds Max
- Platforms: Microsoft Windows, Mac OS X
- Tools: Microsoft Visual Studio, Photoshop, Perforce, Inno Setup, Flash, Emacs, Git, Sublime Text, Excel
- Autodesk Products: Alias, Creative Bridge, Showcase, Maya, Opticore Visualizer, MotionBuilder, 3ds Max

Experience

Software Developer, Contractor August 2017 – April 2020

Mackevision/Accenture

- Helped in the conversion of a Maya plugin from Python to C++. The Python code was encrypted to make it unreadable by other parties. Created a tool to do the encryption/decryption. Cython was also used.
- Helped in creating an exporter from 3ds Max to V-Ray, using Python and MaxScript.
- All work was done remotely, working with teams in Detroit and Germany.

Senior Software Developer February 2006 – March 2016

Autodesk, Inc.

- Continuation of my job responsibilities with Alias following its acquisition by Autodesk.
- Took over full responsibilities for the development and delivery of Creative Bridge. Creative Bridge includes BlueBox, which is a Java batch file convertor that uses DirectConnect (an Alias proprietary data translation engine). Creative Bridge also includes a Maya plug-in (using Python and C++).
- Took over full responsibilities for the development and delivery of Opticore Visualizer. This included weekly meetings with the customer (a major car manufacturer in Sweden) to gather requirements and establish priorities. This was followed by the development, building of the application, QA, and delivery of the release to the customer. Over 140 releases were delivered to the customer over a period of 6 years.
- Developed the proof-of-concept Creative Vault -- a web-based, social, asset-sharing tool. This proof of concept has become the Autodesk product Studio Wall.
- Principal developer for a yearly directed engineering engagement with a major automotive customer for enhancements made to the Alias product. Responsibilities included creating estimates, writing specifications, design of the solution, and software development. Solutions would usually have a user interface component.
- Developer on a team using the Agile methodology in a 2-month engagement to develop from scratch a visualization solution for a major shoe customer. Motion Builder was used as the kernel platform. Scaleform and Flash were used for the user interface. I was primarily responsible for the UI components, integration of the application with Scaleform and Flash, camera tracking and selection, as well as architected the command-based framework with support for undo/redo.

Senior Software Developer October 1989 – February 2006

Alias Research

- Original developer of the square, rail, and align tools in Alias, their geometric continuity algorithms, as well as the surface continuity checking. These tools have formed the foundation of Alias and are still core functionality in the product – a product that has been the leading conceptual design tool for the automotive and product design markets for over 3 decades. These tools also form the foundation of what is referred to as Class A surfacing. These tools also form part of the core modeling functionality in the award-winning Autodesk Maya software. Both the Alias and Maya software have won awards for their contributions to special effects in motion pictures.
- Responsible for much of the modeling functionality in Alias, from the user interface aspects to the lower-level mathematical algorithms, NURBs, and geometric continuity.
- Principal developer for a yearly directed engineering engagement with a major automotive customer for enhancements made to the Alias product.
- When I first joined Alias, Alias version 2.4.2 had just been released. I started working on Alias 3.0, the first version that implemented NURB's (non-uniform rational B-splines). At that time, it only ran on SGI Unix-based high-end graphic workstations and was C-based. Later it was ported to Microsoft Windows and moved to C++.

Education

University of Waterloo May 1987 – October 1989

Waterloo, Ontario, Canada

- Master of Mathematics, Computer Science
- A research paper based on my master's thesis on geometric continuity was accepted and presented at the SIGGRAPH computer graphics conference in Boston in 1989.

University of Waterloo September 1981 – May 1987

Waterloo, Ontario, Canada

- Bachelor of Mathematics, Computer Science
- Honors co-op program

Affiliations & Interests

- 3D Printing
- Photography
- Gardening and hydroponics
- Science and nature
- Raising chickens, rabbits, and ducks
- Web, social media, and blog development
- Technology
- User Interface
- Mobile applications
- Writing
- Music
- ACM member