David Case

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Professional Experience

Downstream   Contractor (2011)

Designed, built and tested 2d and 3d distributed graphics APIs for use in Downstream's large scale video wall display systems. Implemented an 8 foot tall spinning geo-referenced globe to show locations based on data from a database. Built using C++, OpenGL and OpenFrameworks.

Http://davesgalaxy.com/site_media/MVI_1312.MOV
Http://davesgalaxy.com/site_media/MVI_1313.MOV

Advanced Flight Systems   *Software Engineer* (2007-2010)

Responsible for mapping and synthetic vision for the company's line of EFIS systems in the experimental/homebuilt aircraft market. Designed, developed and maintained a moving map system in C, using Python to build a database of navigational data from government sources. Designed a mapping database that quickly loaded and decompressed data from an SD card without slowing down the screen refresh rate. Geo-referenced and displayed a variety of useful information – airports, roads, rivers, lakes, cities, navigational aids, fixes, and terrain height.

Drastically improved graphics performance by implementing a fixed point math system for drawing rotated and scaled imagery. Improved low level SD card driver and file system code to speed up load times. Designed and built a system for getting current weather from an XM Weather receiver – including a full networking stack (ARP, TCP/IP, XM, WDP...)

Ported existing software to run under Linux (original product ran without an operating system). Added synthetic vision system (3D view of terrain ahead of the aircraft).

CD Baby   *Software Engineer* (2006)

Designed, built and deployed a system for encoding and storing music to be distributed to on-line music stores. CD Baby is the largest exporter of music to iTunes by volume. At the time there were over 200,000 albums in their system encoded in over 20 different formats. I designed an encoding and storage system that was able to keep up with the heavy demands of encoding, storing and distributing over 200 terabytes of data. I helped the company fulfill a time sensitive contract with a cell phone provider that would have ended up in an expensive law suit otherwise.

Tiburon Inc.   *Software Engineer* (2004-2005)

Tiburon sells software for 911 emergency dispatching. I maintained C code and provided support for customers, including the Idaho State Police and the cities of St. Louis and Kansas City. I gained experience at Tiburon with complex distributed systems and working in a highly stressful environment (handling 24hr/day support for 911 call centers).

Technical Skills

C and C++

Many years of professional experience in C, thousands of lines of C++ in school and on my own projects. Low level experience includes improving device drivers, and writing networking code.   Higher level experience in graphics, sound and distributed applications. Started coding in C in 1992, learned C++ in 1999. Experienced with cross compilation of code for embedded targets, mostly ARM architecture, with a little AVR (Arduino) programming here and there.

OpenGL

Experience writing OpenGL ES 2.0 code, including GLSL vertex and fragment shaders. Good understanding of performance trade offs of various optimizations.

Linux

Linux desktop user and developer since 1994, professional Unix experience off and on since 2001. I'm writing this in Open Office right now.

Python

I have developed several websites in python, and use it to build map data files for Advanced Flight Systems. Experience with Django, functional programming, and parsing complex data files (ARINC 424, etc...).

Javascript

Experienced with Javascript and other browser side technologies including Jquery, Canvas, and SVG.

Samples of Work

http://www.davesgalaxy.com/	(Python, Django, Javascript, Jquery, SVG)
http://davesgalaxy.com/site_media/spacewar.html/	(Javascript, Canvas, Jquery)
http://github.com/Dav3xor/Python-CheckArgs/	(Python)
http://www.builddiary.net/	(Python, Django)

Education

Oregon Institute of Technology

Bachelors Software Engineering (1998-2003)