Curriculum Vitae - Gordon Williams

Contact Information

Name	:	**Gordon Williams**
Address	:	30 The Plantation, Fen Drayton, Cambridgeshire CB24 4SP
Email	:	**gw@pur3.co.uk**
Website	:	http://www.pur3.co.uk
Contact Number	:	07905 180426

Personal

Date of Birth	:	3rd January 1983
Marital Status	:	Single
Nationality	:	English
Other	:	Full UK Driving Licence

Qualifications

University Qualifications

Obtained at Cambridge University, England
2:1 Computer Science Tripos Hons Degre (DDH)

Completed the IB group project re-implementing 'Logo' in Java. Final year dissertation on recreating a textured 3D model from a series of 2D images. Available on-line at http://www.rabidhamster.org/scan.php

Work-related Qualifications

Cadence Project Management, Learning Tree Beginners C++,
Doulos VHDL, Adaptis Interview for Success

A-Level Qualifications

Obtained at Hitchin Boys' School, Herts.
A Maths
A Further Maths
A Physics
A Computing (progressively-loading 3D web browser in Delphi for project)

Attended advanced maths course at Eton, maths course at Royal Holloway, entered Crest technology competition (with a group technology project), and the British Science fair in London (with a 3D web browser).

GCSE Qualifications

Obtained at Hitchin Boys' School, Herts.
A* Physics, **A*** Maths, **A*** Technology (LPT port relay & input box produced for project), **A** Biology, **A** Chemistry, **A** German, **A** Geography, **B** English, **C** Latin

Skills

Hardware

PIC microcontrollers, Lattice ISP/GDX (Synario IDE, VHDL), Altera FPGAs + Excalibur IC (Verilog + ARM Assembler), PCB Layout, etching + manufacture, as well as prototype board

(strip/pad) layout. Experience of fabricating non-electrical items.

Software

- Both Windows and Linux experience
- Java, C++, C#, C, Delphi, Pascal, Visual BASIC, BASIC, PHP, Perl, TCL, Assembler (x86, ARM, PIC)
- Experience of optimizing compiler/assembler design, hardware simulation, graphics, SQL, XML, XSLT, XPath, HTML, CSS, MFC, C++ STL, COM, AWT, Swing, networked applications, AI, and other areas.
- Large amount of graphics experience, mostly with OpenGL, but also DirectX, and developing renderers from scratch (both raytracing + scanline).

For on-line examples of some of my work in Java, see http://java.rabidhamster.org

Previous Employment

Since 2000 I have been making and selling sound visualization programs. See R4 (http://r4.rabidhamster.org – C++/OpenGL), and R2 (http://r2.rabidhamster.org – Delphi/OpenGL). These have been used at some big events (eg. Glastonbury) and included on several magazines and books. R4 is currently in use as the software behind some professional visuals products and is in use at many venues worldwide.

most recent first

April 2006 – March 2008 : Contracting as Pur3 Ltd : Working for Cad Schroer Ltd. Originally a 7 month contract, but extended 3 times.

- 2D/3D sports analysis package (Java, OpenGL, SQL, XML)
- Football player tracking tool – mapping camera pixels to a 2D pitch (C#)
- Web-based data graphing tool (HTML, PHP, GDlib)
- Hierarchical 3D Structure analyser and editor (C++, OpenGL, XML (MSXML), COM, MFC, STL)

August 2005 to March 2006 : Working for Tenison EDA (www.tenison.com) developing a Verilog/VHDL to C compiler for fast hardware simulation. Programming in C++ and ML

May 2005 : Contract visuals design for Microsoft and Warner Bros to advertise the 'Batman Begins' film

December 2004 : Modification of R4 visuals for embedding in another company's product line.

August 2004 – August 2005 : Working at Altera UK (www.altera.com) on a High Level Synthesis compiler, converting SystemC to VHDL.

- Compiler now shipped with Altera's Quartus development software
- Produced demos and tutorials for compiler including:
  - hardware textured triangle renderer,
  - image filters,
  - hardware raytracer.
- Trained FAEs on tool usage and advantages
- Used the tool to generate published IP for Altera FPGAs:
  - 270Mhz, 32-bit, 32, 16 & 8 point pipelined FFT (one complex pair per cycle)
  - 300Mhz, 32+16-bit, 256, 512 & 1024 point sequential FFT (one butterfly per cycle)
  - Sections of WiMAX uplink and downlink

Summer 2003 : Working at Cambridge University Computer Lab to produce hardware practical classes based on Altera Excalibur EPXA1 demo boards (FPGA with integrated ARM processor) for second year students (Part IB). Available at http://www.cl.cam.ac.uk - Sponsored by Altera.

April 2003 : Creation of a program to listen for specific sequences of tones on a CB radio and record the voices afterwards. Commissioned by an American volunteer fire service. C++

March 2003 : Creation of realtime visuals system for a 40ft video wall at 'The Beach' nightclub in Miami. Featured in a film. Programming in Delphi

November 2002 : Creation of a 45-minute, scripted set of realtime 3D Visuals for a health spa in Thailand. Programming in Delphi

March 2002 : Creation of realtime 3D Visuals for the launch of a new BBC TV series - “Ace Lightning”. Also used in the BBC's promotional Video. Programming in Delphi

Feburary 2001 : Realtime 3D visuals for the launch of Gainward graphics' new video card (ti4600) at the CeBit technology show in Hannover. At the time the fastest consumer 3D Video card ever produced. Programming in Delphi

Summer 2001 : Creation of tools to load and save settings in games for Xcession CyberCafe - http://www.xcession.com

Summer 2000 : Reimplementation (in Windows) of in-house tools (previously DOS) for hardware/software development company Rotork Instruments. Included schematic (and other) file format conversion, execution of tools, project directory management, etc. programming in Delphi.

GCSE Work experience + Summer 1999 : Entire programming of pre-compiler for Lattice GDX crosspoint switches in WSP's hardware year 2000 compliance tester at Rotork Instruments. The tester was a portable device that clipped over the processor/RAM/ROM/RTC ICs in a system, and monitored program execution at up to 60mhz clock speeds. The pre-compiler co-ordinated re-routing of IC pins to a large FPGA, including multiplexing address high/low and data, and produced VHDL as an output. Programming in Delphi and Visual Basic (for access database).

1998 : Production of PCBs for Lawtant LTD. Mostly ROM-emulators.

Personal Projects

I do a lot of projects in my free time – while they can't be listed here, some can be seen at http://www.rabidhamster.org. Some examples of my work are:

Road Legal Kit Car, RealtimeVisuals Software, 3 Jointed Robot Arm, Palm Organiser Apps, PCB Design and Plotting Software, Walking Robot Legs, PIC Based Fan Controller, FPGA based full digital amplifier

Some of my graphics programs and code have also been featured in Magazines, published on Magazine CDs, as well as a book on MP3s, and an OpenGL tutorial CD.