

# R. R. Watts

## SKILLS:

I am an experienced software engineer and technical manager with significant academic, implementation and product lifecycle skills. I am good at working as part of a team, and can handle almost any aspect of product and software development, from initial meetings with clients through the design, architecture, implementation and the design of novel algorithms and techniques, to the delivery of the finished product.

- Proven software engineering and technical management skills.
- A wide range of experience from managing web applications development to video codec implementation in C and assembler, to operating systems coding and hardware design in VHDL.
- Substantial project and team management experience.
- Significant, proven academic, teaching and research capabilities, including expertise in human-computer interaction and compiler design.
- I also have experience in C/C++, Java, Linux kernel and application development, video and audio codec implementation, digital signal processing, operating systems design, hardware design, Xilinx FPGA programming in VHDL, JTAG, VB6, HTML, XHTML, DHTML, SOAP/WSDL, PHP, Perl, Python, Javascript, JSP, Applets, compilers, gcc and GNU toolchain internals, bash scripting, HTTP, assembly language (ARM, TI C6x, 68000, 6802, 6502, some x86, various MCUs), SMTP, TCP/IP, XML and memory management (I have written XML parsers and debugging allocators).

## EMPLOYMENT HISTORY:

**1995 – 1997    Research Assistant, Rainbow Group, University of Cambridge Computer Laboratory.**

- Development of core code for the DigitalDesk: an augmented reality desktop.
- Developed algorithms, managed implementation, and architected and implemented the software. Coauthor credit on six published papers.

**1997 – 2000    PhD Student, Rainbow Group, University of Cambridge Computer Laboratory**

- The Development Of An Uncertain Reasoning System - a way of reasoning about contradictory or uncertain data - applied to the automatic generation of user interfaces.
- Runner-up prize for best paper and presentation at Eurographics UK 1999.

**2000 - 2001    Software Engineer, Transversal (<http://www.transversal.com/>)**

- Developed code for Transversal's flagship information management product, Metafaq.
- Included designing significant parts of the program and implementation in C++.
- Maintained the build system. Patched and fixed bugs in gcc and the Linux dynamic linker.

**2001 – 2003    Development Manager, Transversal (<http://www.transversal.com/>)**

- Managed a team of 5-7 developers, including interviewing applicants.
- Architected additions to the system, managed the development process.
- Specified substantial projects, from systems for training call center agents to processing credit card transactions for internal use and for blue-chip customers such as Sony Playstation and MFI.
- Managed product lifecycles, from meetings with clients to delivery of finished product.

**2000-present    Director of Studies in Computer Science, Selwyn College, University of Cambridge**

- I am currently a bye-fellow of Selwyn College, Cambridge, directing studies in Computer Science.
- I arrange small group teaching, handle academic welfare, interview and rate applicants, and together with the admissions tutors, am responsible for selecting applicants for offers.

- I carry out small-group teaching in Computer Science in all years, specialising in compilers and processor architecture.

**2003-2004 Senior Engineer, Azuro (<http://www.azuro.com/>)**

- Developed EDA software for a new startup.
- Implemented new functionality in C++, analysed existing technology.

**2004-2006 Software Consultant, SJ Consulting Ltd (<http://www.sj.co.uk/>)**

- Worked on a four-tuner hybrid STB using Xilinx Spartan-3 and Microblaze. Wrote core software from bare metal to middleware API, including cross-CPU RPC, a realtime OS with synchronisation and priority inheritance, filesystem, demux and EPG decode.
- Simple browser-based PVR software and VNC client in C for another STB.
- Three months on secondment to Metanate, writing attachment parsing code for an EAL4-certified X.400 email gateway.
- JTAG factory test implementation, and VHDL design work for an H.264 HD accelerator based on Xilinx FPGAs. Assisted in project planning (both client-side and internal), client liaison, responsible for final sign-off on schematics for test boards, adapted and debugged DDR1 Xilinx memory controller code for DDR2 RAM, implemented and tested much of the H.264 decode accelerator in VHDL.

**2006-2007 Software Consultant, Amino Communications Ltd (<http://www.aminocom.com/>)**

*(SJ Consulting Ltd was bought by Amino Communications in January 2006)*

- Played a major role in implementing Windows Media video and audio decoders and ARM to DSP communications drivers for TI-based Amino STBs running Linux.
- Responsible for implementing Windows Media support on Amino STBs, including kernel ASF demux, HTTP and MMS media fetchers, and Windows Media DRM.
- Some light digital signal processing work – mainly audio resamplers and filters.
- Maintained regression suite for our decoders, managed bug tracking and release processes.

## PERSONAL DETAILS:

Surname:	Watts
Forenames:	Richard Robert
Date of birth:	15th June 1974
Place of birth:	Famagusta, Cyprus
Nationality:	British
Home address:	190 Kendal Way, Cambridge Cambridgeshire, CB4 1LU
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NI number:	JA 72 64 99 D BZ
Referees:	On request.

I hold a full, clean, UK driving licence.

## EDUCATION:

**Selwyn College, Cambridge (Computer Science Tripos), 1992 - 1995**

First in Part II Computer Science Tripos, resulting in B.A. and M.A. Degrees.

**Computer Laboratory and Selwyn College, Cambridge, 1997-2000**

Ph.D. in Computer Science: 'The Design Of An Uncertain Reasoning System', on automatically generated user interfaces.

List of publications and workshop committee posts available on request.