CURRICULUM VITAE

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SUMMARY

Java development, integration, debugging & testing, from database to the web/GUI layer, together with key lifecycle tools; Maven, Subversion/Git/Hg, Hudson & Nexus. Use of Eclipse & Netbeans IDEs. Knowledge of web frameworks including Spring, Hibernate & Java EE, awareness of design patterns & current best practice. Python/Django development with JavaScript/CSS, web scraping with XPath, as well as some C# experience.

Several years' Linux systems administrator experience, involving technical & clerical office IT as well as hosted web server operations, maintenance & security. Experience in shell scripting, advanced networking techniques through telecommunications test roles including virtual private networks & firewalls.

EMPLOYMENT HISTORY

May 2013 – Present, Personal projects

Development of various physics simulations (using my own Symplectic integrators) mostly in Java and Python, but also JavaScript and some animated raytracing. N-body simulation and black hole orbits (4 dimensional geodesics in general relativity), and visualization of relativistic travel. All projects are under Git source control, and most are publicly hosted on GitHub (together with my older Spring/Hibernate and Java EE 6 testbed projects). Java development is mostly in Eclipse, but also in Netbeans/CLI. Java projects have jUnit tests, use Jenkins for continuous integration and Nexus as a maven repository manager, both hosted on a Tomcat 7 server. Python projects use VPython for PC, and pi3d for Raspberry PI graphics. The JavaScript simulators use HTML5/Canvas/CSS or Three.js for animated display. Next step is to set up a simulation server (either RESTful or WebSocket) on the PI using either Glassfish or Django.

May 2013 – April 2014 (IDSI UK Ltd.)

Development of Java software for collection, processing and display of oil well production logging data. Modelling, calibration and temperature compensation of instrument sensors. Eclipse RCP/EMF environment with Git source control and Rake/Maven build.

October 2012 – April 2013 (Social 360 Ltd., Okehampton)

Django/Python web development and scraping for internal operational interfaces, with JavaScript/CSS/XPath, using a MySQL backend, under Mercurial source control. Linux/Ubuntu server administration (remote backups/file transfers, real and and proxy server setup).

December 2007 – September 2010 (Goss Interactive Ltd., Plymouth)

Client & Server-side Java (versions 1.4.2 and 6) development for a commercial web content management system (iCM). Eclipse IDE, Junit/Easymock testing, Subversion source control, Maven build environment, Hudson continuous integration. Design and implementation of Hibernate persistence for a Mule network agent. Maintenance of a Solr/Lucene-based search library. Development of additional components for the main CMS product.

(Period of self-training . . .) , then May 2006 - July 2007 (Phosphorix Ltd., Exeter)

J2EE development for educational sector – web portal and custom networking applications. Struts/Spring/Hibernate, Eclipse, Tomcat. Linux/FreeBSD systems administration, VPN/VNC teleworking environment, emulators - Tomcat clustering/HA, remote backups.

September 2004 - October 2005 (Digital Creations Ltd., Abbotskerswell)

Software development, mostly in support of vehicle telematics systems and GPS/GPRS subcomponents. Target hardware platforms included PCs, PDAs (C# with Visual Studio and SharpDevelop IDEs on the .NET Compact Framework platform) and mobile phones (Java with Eclipse IDE on the J2ME platform), for client (via GPRS) access to Web Services.

May 2004 - August 2004 (Titan Computing Ltd., Torquay)

Computer fault diagnosis and repair. Network maintenance, servers, ADSL, wireless.

August 2003 - January 2004 (Saltstone Media Ltd., Kingsbridge)

Systems Administration of web development environment. Supervision, maintenance and repair of commercial Linux/Apache/MySQL/PHP web servers (9 in all) and email/DNS servers, as well as an internal network of around 20 office machines running a mix of Windows 98/2000/XP, Mac 9/OSX and Linux.

October 1999 - May 2002 (Syn-Apps-Sys Ltd., Abbotskerswell)

Continued previous testing work for the Nortel Internet FWA upgrade until the end of April

2002, when the product was withdrawn from the market and the project wound up.
System administration and IT support for a mixed network (100+ nodes) of Windows/Linux PCs and Solaris/HPUX workstations, plus a number of additional network devices (including test equipment, printers, routers, WEB appliances, modems). Specific achievements include:

- Installation and performance tuning of main Linux server, desktop workstations and dedicated test machines.
- Scheduled network backups of critical machines to tape, with off-site storage. Key technologies: firewall, remote dial-in access, SMTP/POP3 email, news server, VNC, SSH, NIS/NFS, DNS, Samba, Apache, shell, tcl/Tk, C.
- I specified and procured the desktop machines as well as the main server, which provided centralised home directories for Windows users and network logons via SMB, as well as Unix sessions for all via VNC.
- I partitioned the disks, located drivers for the RAID hardware, configured and compiled the OS kernel (including raising various resource limits as appropriate for server deployment) and installed all software on the server.
- The main server provided caching DNS, routing, scheduled email collection using POP3, and outgoing email via SMTP. Other key machines provided newsgroup access, server-side scripting, and SQL databases.
- I also administered NIS on the Solaris server, which was used mainly for software development.
- Key machines were updated regularly for security fixes and we filtered incoming email for viruses and other malicious attachments.

October 1994 - September 1999 (Nortel Fixed Wireless Access, Paignton)

Systems Integration and Test for Nortel's Proximity fixed wireless access (FWA) telephony products.

- Complex software integration, problem reporting, working with various development teams, and testing under a regime including many different releases and variants of system software and hardware.
- Development of a test system configuration framework using a unix shell interface to existing test tools, writing test specifications, developing a test automation system using shell, tcl/Tk & expect.
- Test case design, implementation and control. operating, installing and maintaining Unix like systems, basic TCP/IP and PPP network setup, subnetting and routing.

April 1990 - September 1994 (BT Laboratories, Martlesham Heath)

Radio-fibre systems and devices specialist, interworking with various optical device development programmes. Consultancy to BT's operating divisions, concerning application of radio-fibre systems to cellular networks and satellite earth stations. Development of spreadsheet tools for detailed performance and cost modelling of complex radio fibre systems. Specific achievements include:

- Contributing to a strategic broadband access feasibility study, including architecture, costs, and identifying suppliers.
- Detailed system design, specification, procurement of equipment, planning, and operation of a 29GHz broadband radio-fibre field trial in Kesgrave, Ipswich.
- Writing technical specifications in procurement of 18GHz and 4/6GHz optical fibre links for antenna remoting at Goonhilly satellite earth station. Adjudication of tenders for 18GHz and 4/6Ghz cross-site links at Goonhilly. Design of an IF cross-site links at London Teleport. Technical and cost studies for long distance, multi-hop IF optical links.
- Coordination of novel millimetre-wave transmission over optical fibre demonstrations (both at 29GHz and 40GHz) which led to two patent applications. Input to project planning for radio fibre work in the group. **US Patent 5,777,771**
- Design, specification and procurement of RF head for RACE II 60GHz channel sounder. Investigation into low-cost phase locked source and mixer technology for RACE II MBS.
- Design and layout of GaAs power MESFETs, and specification and design of limiting amplifier MMICs for a fibre-fed cordless telephone access demonstrator. Use of linear/nonlinear circuit simulators, and chip layout/mask generation software.
- Promotion to Senior Professional (MPG4), supervision of one professional engineer and one technical officer.

Jan. 1989 - Mar. 1990 (Thorn EMI Central Research Laboratories, Hayes)

- Technology transfer work, concerning the theory behind a custom analogue silicon IC hysteresis controller for switched mode power supplies. The chip was designed to perform power factor correction for incandescent lamp installations.
- GaAs MMIC design (using the Plessey F1a & F20 processes), and simulation of microwave mixer circuits, using my own harmonic balance software as well as commercial linear and nonlinear circuit simulators. Extensive use of Pascal on MicroVAX/VMS minicomputers.

- Dynamic modelling of GaAs MESFETs for mixer applications using harmonic power measurements (presented at an IEE colloquium).

EDUCATION

Oct. '82 to Dec. '88 (University of Leeds)

PhD Thesis - Wideband Microwave Mixers.

- Study of wideband microwave mixers, coding and development of various novel harmonic balance algorithms, including methods for their improvement.
- Use of Pascal on VAX, Amdahl and Prime mainframes.
- Design, simulation, layout and measurement of a Gallium Arsenide MMIC distributed mixer using the Plessey F1(a) MESFET processes.

BSc Honours Class II(i) in Electrical and Electronic Engineering

- Final year project: Direct Broadcasting by Satellite

1979-1981 (King Charles I School, Kidderminster, Worcs.)

4 GCE A Levels: Physics (A), Chemistry (A), Mathematics (C), General Studies(B)

1974-1979 (Royal Wolverhampton School, Wolverhampton, W. Mids.) 9 GCE O Levels