

# Robert A. J. Marshall

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## Personal profile

A senior software developer capable of creating innovative systems in smart metering and electrical distribution. I possess over ten years' experience developing complex applications for Python, C++ and Java in demanding environments. I enjoy working as part of a team to deliver solutions and develop new skills. I pride myself on providing clients with powerful and efficient programs.

## Employment History

2016-2018 **Software developer**, *Codethink*, Manchester.

Support for the kernelci 'board at desk project' B@D - kernel testing using a VM within the user's local environment.

Maintained the genivi development environment (GDP). Using my Linux and Linux Kernel skills.

2010-2015 **Software developer (Contract work)**, *General Electric, Siemens, Rocksalt and Pyreos*.

- Design and implementation of Linux kernel modules for motion detection running on an Android device (**Pyreos**).
- Development of smart meter software in Java/C for **General Electric** in a mixed Windows Linux environment. The software operated within an Oracle environment using TCP/IP and UDP libraries.
- Developing code for the implementation and testing of metering systems using the DLMS protocol; both client and server functionality were enhanced.
- Enhancement and bug fixes for a C and Ruby application for a software house (**Rocksalt**). Application provided web interface to account data via MySQL.
- Development of user interface for commissioning of embedded electronic system using C++ and MFC within **General Electric**. Documentation of existing system and enhancement of system for commissioning/decommissioning of battery control system using CAN network.
- Enhancements to existing power control system for **Siemens PTI** using a proprietary Fortran-like language.
- Trained in Agile methods and used Test Driven Development.

2007-2009 **Senior software engineer**, *TNEI Services Ltd*, Manchester.

Developing electricity grid network modelling tools

- Providing software and hardware support for company users and the network infrastructure.
- Maintaining and developing C++ software under Linux and Windows within the area of power systems simulation.
- Using Python to automate and enhance the capabilities of TNEI's electricity network modelling tool (IPSA+) for a variety of power utility companies.
- Managing company email system (using exim4 and spamassassin) and providing hardware and software support for the company.

- Liaising directly with the clients (Scottish Power and Northern Ireland Electricity) during application development.
- Assisting clients in analysis and adding functionality for the development of custom application software by developing python add-on modules with their own customer specified GUI. Qt was used to design the GUI and to implement the program/user interaction both in Python and C++.
- Responsible for the support and releases of the company software, maintaining the installers and ensuring that the software downloads were secured from access by users without maintenance contracts.

2005-2007 **Software Consultant**, *Various Clients*.

- Administering, installing and maintaining a variety of Linux distributions (RedHat and Debian based)
- Establishing mixed Linux/Windows networks and developing iptable knowledge in order to enforce safe practices.
- Developing Java applications under Linux that perform automatic meter reading using SOAP and store and access results in an Oracle database.

2000-2004 **Senior engineer**, *Power Technologies*, Knutsford.

- Management of software design, testing and release, team management and interfacing with customers over helpdesk issues and future requirements.
- Responsible for integration of reliability engine within PSS/Adept and the development, testing and release of PSS/VIPER.
- Software support and design.
- Implementation of the merging of two product lines combining the code bases efficiently.
- Management of site hardware and in charge of third party software installation and upgrading.

1993-2000 **Senior CAD Engineer**, *Bechtel Water Technology*, Warrington.

- Building a numerical methods library for the analysis of hydraulic networks, modelling the network elements and solving the associated differential equations.
- Creating a software tool for the solution of mass-balance equations derived from the prototyping of process flow diagrams.

## Computer Language Skills

Language	Operating System	Example Application
C++ / C	Unix/Linux	Electricity grid network design...
Visual- C++	Windows	... and User Interface design
Python	Linux/Windows	enhancement of electrical power modelling tools
Java	Linux/Windows	Numerical analysis
Java	Linux	Automatic meter reading
Lisp	Linux/Windows	Emacs major mode design
Ruby	Linux/Windows	User interface to MySQL database of financial data

## Other Software Tools

Tool	Application Area
Postfix/Exim/Spamassassin	management of company email system
ssh/iptables	Safe management and use of LAN/WAN
Trac/Test Track	Enhancement/bug database, for scheduling tasks
svn, git, cvs, rcs	A variety of version control systems
SQLPlus/ODBC	CAD database and tool interfaces
WiX	Development of windows installers
XML	Interchange of graphic & design data

## Hobbies and interests

I enjoy listening to and performing music; I take part in various local festivals and also enjoy hill walking. I have a working knowledge of French, both written and spoken and continue to develop this in my spare time.

## Education

1983–1984 **MSc**, *Bradford University*.

1971–1975 **BA**, *Trinity Hall, Cambridge*.

## Publications.

I have published and presented papers on my work at a number of international conferences:

Implementation of a discrete event simulation environment in Ada (MSc Dissertation).

A Simulation Engine Driving Instruction Language (main author), Proceedings of the Electronic Design Automation Conference, London. July 1987

Using EDIF with a Hardware Simulation Engine (with H.J. Kahn), Proceedings of the European EDIF Forum, Brussels. September 1987

The Design of a Methodology for the Intelligent Control of Simulation using the Manchester Simulation Engine (with N.P. Filer) Proceedings of the ESM89, Rome. June 1989.

The Capabilities of the EDIF LogicModel View (with C. N. Dente) Proceedings of the Third European EDIF Forum, Bonn. October 1989.

An Information Modelling Approach to VHDL (with H.J. Kahn) Proceedings of the First European Conference on VHDL Methods, Marseille. September 1990.

A Preliminary Information Model of VHDL (with H.J. Kahn) Proceedings of the Second European Conference on VHDL Methods, Stockholm. September 1991.

A Structural Information Model of VHDL (with H. J. Kahn) in VHDL for Simulation, Synthesis and Formal Proofs of Hardware, editor Jean Mermet, Kluwer academic publishers

Robert Marshall and Simon McAulay. Aquavitae - a tool for the hydraulic design of wastewater treatment works. In *Proceedings of Hydrossoft '98*, 1998.

**References available on request.**

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