Robert Ham

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Skills and Experience

- C
  - Extensive experience programming Unix and C environments
  - Contributed to a variety of Open Source projects including the Linux kernel, Wayland/Weston, Pulse Audio
  - Authored JACK Rack, real-time DSP plugin host for music production for GNU/Linux and LASH, the first audio session management system for GNU/Linux
  - Developed bespoke query language for experiment database in MSc study

- C++
  - Maintained VC++ wrapper for pipetting-robot interface library
  - Implemented advanced image processing for Optical Mark Recognition
  - Developed extensive suite of software used in experiments for MSc thesis study
  - Contributed to development of Rosegarden free software MIDI sequencer for GNU/Linux
  - Developed backend betting infrastructure on GNU/Linux
  - Acted as maintainer for Unix port of free software libodbc++ ODBC library

- C#
  - Developed control software for pharmaceutical emitted-dose measurement robot
  - Developed reusable control component and UI for bespoke high-pressure oil pump unit
  - Developed web-services components to supercede raw database access for enterprise billing system
  - Briefly maintained Umbraco/ASP.Net web site for International Transpersonal Assoc.

- Java
  - Developed bespoke image processing software for web based system executing in Oracle internal JVM
  - Studied BSc Computer Science at an Authorized Academic Java Campus

- General programming and scripting
  - Extensive experience using a variety of programming and scripting languages including: Unix shell scripting, Perl, Visual Basic, Python, Ruby, JavaScript, PHP, Pascal, Fortran, Lisp, Clean, Haskell, Prolog, Octave, Matlab, R, SPSS, Oracle, etc.

- One of six developers of the Jack Audio Connection Kit to share the Bronze award in the 2004 Open Source Awards

- Volunteer (previously Acting Chair) for Manchester Free Software and active in the local community, presenting numerous talks at different free software groups

- Actively involved in free software and Linux global communities, holding a booth at the LinuxWorld Expo in New York in 1999, presenting talks at the Association For Free Software's first annual conference in Birmingham in 2003, and the 2nd International Linux Audio Conference in Karlsruhe, Germany in 2004

- Patches accepted in a number of free software projects including: Linux, Weston, X (libxcb, xcb-proto, xserver), Open Build Service, OpenWRT, OpenEmbedded/Yocto, distcc, GNU Hurd, MythTV, Crystal Space, GNOME-DB, CurlPP, GRAMPS, Android image utils, SHR, Fluidsynth, Legasynth, AMSynth, vkeybd, LinuxSampler, FreqTweak and Hydrogen

Employment History

Jun 2016 – Present   **Traffic Observation via Management Ltd.,**
Embedded C Software Developer

- Developing proprietary 802.11 Wi-Fi monitoring and security system in C atop OpenWRT on MIPS
- Designing bespoke communication protocol and writing C++ simulation software to evaluate it

Dec 2014 – Jun 2016   **Collabora Ltd., Software Engineer**

- Working with global leaders in automotive, healthcare, video gaming and web search industries to leverage Open Source
- Developing a custom OpenEmbedded/Yocto-based distribution on i.MX6 as part of a team, contributing various fixes upstream
- Writing a kernel driver for a USB hardware random number generator
- Conducting research into the efficiency and practicality of zram-based swap on an ARM-based single-board computer
- Modifying Pulse Audio to cope with HDMI outputs when stereo-only sinks are connected
- Writing a GStreamer element for decoding FM radio in Tizen-based in-car entertainment systems
- Modifying Wayland/Weston to make some critical key combinations optional
- Contributing to the Debian packaging of Open Build Service 2.6
- Modifying in-house LAVA testing platform to support automatic execution of Debian package tests on embedded ARM systems

Jun 2012 – Dec 2014   **Stanley International Betting Ltd., C++ Developer**

- Developing GNU/Linux backend server programs for betting infrastructure using C++
- Researching and developing advanced Optical Mark Recognition software for shop tills
- Porting C++ backend software suite to new release of Debian
- Git and Subversion repository manager

Oct 2011 – Jun 2012   **Astech Projects Ltd., Software Engineer**

- Developing bespoke code for new robotic lab automation systems
- Supporting on-site commissioning and maintenance of robots
- Maintaining and implementing variations on existing control software
- Working with C#, C++, Oracle, MS SQL, Siemens industrial PLC STL/LAD/SCL languages
- Implementing systems and documentation to GAMP 5 and United States 21 CFR Part 11 standards

Mar 2006 – Sep 2010   **Bristol City Council, Analyst Programmer**

- Developing, maintaining and supporting an Oracle-based assessment tool for special needs teachers
- Administering GNU/Linux servers
- Developing Java and PL/SQL code to support HTML, CSS and JavaScript web pages

Nov 2003 – Mar 2006   **E.on UK, Technical Support Analyst**

- Supporting mission-critical Oracle database systems using Windows and Unix tools
- Analysing and fixing faults in data processing programs written in Oracle PL/SQL, shell script, and JavaScript

Education

2008 – 2011   **Liverpool John Moores University**
MSc Consciousness and Transpersonal Psychology
Classification: Merit, thesis title:
    The Effect of Dynamicity on Psychokinesis

1999 – 2002   **University of Sheffield**
BSc (Hons) Computer Science
Classification: 2:2, final year modules:

Advanced Object Oriented Design	Text Processing
Advanced Software Engineering	Natural Language Processing
Java E-Commerce	Programming Language Semantics
Theory of Distributed Systems	Computer and Data Networks

3rd year individual project: Rewriting the GNU C library's regular expression implementation

1997 – 1999   **Filton College, Bristol**

A levels	*AS level*
Computing - A	Further Mathematics - C
Psychology - E	
Mathematics - C	

1992 – 1997   **Bedminster Down School, Bristol**
GCSEs
9 taken, achieving C or above in each, including

Maths - A	Science - A A	French - A*
English - B	English Literature - B	

Interests and Activities

My spare time is spent programming free software, reading, and making music. I play the piano and guitar, and produce electronic music which is available on the Internet. I cycle and practice yoga. I meditate daily. I help organise a local shamanic circle. I regularly organise and attend spiritual retreats.

Personal Information

Nationality	British	**Date of Birth**	22nd February 1981
Marital Status	Single		