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An enthusiastic post-doctoral electronics and software engineer with an interest in modelling and creating efficient solutions for complex problems.

In Summary I have just completed a PhD at the University of Durham titled "Strategies for Optimising DRAM Repair", sponsored by Verigy Ltd (the semiconductor test company spun out from Agilent in 2006) and hold a MEng degree from the University of Bath.

I have experience in software engineering, including embedded systems, in research hardware design and development and am proficient in the C, Java, and Python programming languages with experience in many others. I am also proficient in the use of several flavours of version control, development environments, and the GNU/Linux operating system. I am interested in radio frequency and digital electronics as a hobby, and hold a UK amateur radio licence.

I am keen to join a team solving complex technical problems requiring knowledge of hardware, embedded software, and the modelling of these systems.

Education ⋄ **PhD, University of Durham, Durham, DH1 3LE, 2005-2010** The manufacture of DRAM devices is a low yield process, but yield can be improved by the allocation, post manufacture, of redundant resources provided on each die. The calculation of the optimum use of these redundant resources is an NP complete problem, and must be customised for each new DRAM device.

My thesis developed a mathematical model of these redundant structures; and algorithms operating upon this model used to customise redundancy analysis algorithms for specific devices. A prototype tool has been developed implementing these ideas, providing a graphical interface to the model of redundancy structures and automatically generating customised redundancy analysis algorithms. The work in this thesis forms the basis for two patent applications in progress.

⋄ **MEng (2.1) Hons, University of Bath, Bath, BA2 7AY, 2001-2005** Degree title "Computers Electronics and Communications", covering digital communications, software engineering and electronic theory and design.

My research project investigated the possibilities for an operating system with detailed control of the underlying hardware to control energy consumption. By developing a simple algorithm for controlling the power state of memory the energy consumption of that memory was reduced by 80%.

⋄ **Kimbolton School, Kimbolton, Cambridgeshire, PE28 0EA, 1994-2001** Four A-Levels (2001): Physics (B), Mathematics (C), Biology (C), and General Studies (A). Ten GCSEs at grades A and B.

Employment ⋄ **Verigy Ltd, Cupertino, CA, USA** Final Internship at Verigy, one month in spring 2009. Focused on the testing and integration of the prototype tool developed during PhD research and previous visits to Verigy. Presented research and tool to groups within Verigy.

⋄ **Durham Incubation 3, Durham, UK** Worked for a Durham University spin-out company from 2005-2010 developing custom vehicle and package tracking hardware and the supporting software for Durham County Council and others. Worked as part of a small team and was responsible for the development of on-board software controlling GPS, and GSM hardware, for a micro-controller managing external sensors and power management, and for server software receiving data from the tracker units.

The project also required liaison with customers to determine initial product requirements and then to make improvements and modifications to the prototype product in the field.

⋄ **Verigy Ltd, Cupterino, CA, USA** Internship at Verigy for three months in the summer of 2008 as part of PhD sponsorship. Used previously generated model and theoretical code generation

schemes to extend the modelling tool already developed to allow automatic redundancy analysis algorithm customisation based upon model data.

◇ **Verigy Ltd, Cupterino, CA, USA** Visited Verigy for three months in the summer of 2007 as part of PhD sponsorship, working on theoretical modelling of DRAM redundancy structures and their implementation in graphical tools. Responsible for initial problem analysis, mathematical and graphical model development and implementation of an eclipse based model editor.

◇ **TTPCom, Melbourn, UK** Spent three months in the summer of 2004 as part of a small team responsible for porting TTPCom's application environment from a commercial embedded operating system to GNU/Linux on a Texas Instruments ARM development board. This required the customisation and compilation of a suitable GNU tool-chain, modifications to the code base to ensure compatibility with the new tool-chain, and after compilation debugging on the target platform.

◇ **TTPCom Danmark ApS, Aalborg, Denmark** Worked for a month in the summer of 2002, developing a demonstration navigation and mapping application for TTPCom's Wireless Games Engine (a C++ environment targeting an embedded platform).