William Kenyon (M.Eng, B.A, British Citizen)

Contact Information

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Higher Education

University of Cambridge, UK **2009–2013**

M.Eng. Computer Science Class: Merit

Masters Project: I implemented *stack backtraces*, a frequently requested debugging feature for the Glasgow Haskell Compiler (GHC). Once my code makes it into a GHC release, it will make debugging easier for thousands of Haskell programmers.

Masters Courses: Algebraic network routing, Automated reasoning, Category theory, Nominal sets, Complexity of logic.

B.A. Computer Science Class: 2.1

Undergraduate Project: Monte Carlo Tree Search (MCTS) is a state-of-the-art artificial intelligence technique, which has allowed computers to beat professional human players at *Go*. I implemented the first MCTS library for Haskell.

Group Project: *FrontlineSMS:Radio* is an SMS hub which organizes messages received during a radio broadcast. Our group built the first prototype of FrontlineSMS:Radio. I personally delivered a demonstration of our tool to a packed out lecture theatre. The audience were invited to send text messages to my 'radio show,' and I demonstrated our tool searching, and organizing their messages.

Undergraduate Courses: Compilers, Decompilers, Graphics, Natural Language Processing, Digital Signal Processing, and Verification. Quantum Computing, and Security.
Systems: Computer Architectures, Networks, Operating Systems, and Electronics.
Theory: Complexity, Databases, Semantics, Languages & Automauta, and Types.
Mathematics: Logic, Discrete Mathematics, Probability, Calculus, Matricies, Vectors, Fourier Series, Fourier Transforms, and Taylor Series.
Physics: Electromagnetism, Relativity, and Quantum & Classical Mechanics.
Non-technical: Buisness, E-commerce, Economics, Ethics, Law, and Philosophy.

Secondary Education

Queen Elizabeth School, Kirkby Lonsdale, Cumbria, UK **2002–2009**
GCE Grade *A* in Computing, Electronics, Physics, Maths, and Further Maths. **2009**
GCSE 9*A**s and 4*A*s. **2007**

Employment

RealVNC Ltd., Cambridge, UK **Summer 2011**

I started the **VNC Viewer for Google Chrome** project by building the first prototype. Since then, over 100,000 people have downloaded the production version.

Lancaster University, UK **Summer 2009 & 2010**

The **p2pnext** project implemented p2p internet TV for the BBC and other broadcasters. I experimented with grouping geographically close peers to reduce load.

The **Community Wireless** project brought fast internet into a community with no broadband availability. I helped develop a wireless mesh network based on OpenWRT. I worked on a range of tasks, from developing an access control portal, to developing a last-resort emergency recovery system, to fastening boxes to rooftops.

Skills

Programming Languages

General: C/C++, Haskell, Java, ML, Prolog, and Visual Basic .
Hardware Description: System Verilog.
UNIX Tools: Bash, Matlab, Perl.
Web: Javascript, HTML, PHP, Perl. and SQL.
I studied programming languages formally in Type Theory and Semantics courses.

Libraries & Tools

Concurrency: Java concurrency, and pthreads in C/C++.
Networking: Java sockets, and sockets in C/C++.
General: Standard C/C++ library, Standard Template Library.
Version Control: Git, and Subversion.
Automated Documentation Generation: Haddock, and JavaDoc.
Automated Unit Testing: QuickCheck, and JUnit.
Web: Ajax, Drupal, node.js, and Websocket.
Operating Systems: Linux, Macintosh, and Windows.

Data Structures & Algorithms

Fibonacci Heaps, Disjoint Sets, B Trees, Red Black Trees, External n-way Merge Sort, and basic data structures & algorithms. I have implemented many of the above, and I can find asymptotic complexity bounds for algorithms using standard and amortized analysis.

Logic & Discrete Mathematics

I can prove statements, formally/informally in first/second/higher order logics, temporal logics, hoare/separation logic, polymorphic lambda calculi and sequent calculi. This formal background gives me the mind-set required to write good code.

Teamwork

Teamworking skills were essential at internships, and during my undergraduate group project. I had client meetings, deadlines to meet, coding and documentation styles to adhere to. I like putting myself 'out there,' if there is a presentation to be made, I'm always the first to volunteer.

Intrests

During university I was seriously involved in rowing. I rowed in the Lightweight Boat Race against Oxford in 2013, and was a spare in 2012. In 2013, I also made it to the second round of trials for the Great Britain under-23 team. I have also participated fully in society life, having skied (competitively), sailed (competitively), and sung (socially) my way through my free time at university.

Referees

Hannah Clear (hannah.clear@realvnc.com)
Neil Dodgson (nad10@cam.ac.uk)
Nicholas Race (n.race@lancaster.ac.uk)