George Broughton

MSc, MComp Computer Science
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Profile

I am a young and enthusiastic software developer with a wide range of interests from web technologies and interfaces right the way to low level networking and system libraries. I've worked on software development in one form or another from a very young age, originally self-taught, before going on to study the subject in much greater detail at university. My work at undergraduate level attracted the attention of the university, who then offered me a full scholarship to return to complete a postgraduate degree, which I am currently completing. My strengths include problem solving, having a meticulous attention to detail, a high work rate, and being a fast learner.

In my spare time, I enjoy travelling and challenging myself. This year, I was part of a team that raced a sailing boat across the Atlantic Ocean, placing second against over a dozen competitors, with a time of 17 days, 8 hrs. I have also completed ascents of various mountains in the UK, including Ben Nevis, Snowdon and Scaffel Pike.

Summary of Skills

- Worked extensively with web technologies, ranging from JavaScript and PHP to SQL database systems and security
- Low-level experience covering operating system level drivers to GUIs, and most things in between (C, C++, C#, Java)
- Vastly knowledgeable with different operating systems including Debian and Fedora Linux
- Customer sales, satisfaction, and communication experience as the face of the company
- Experienced with development methodologies including Agile and Scrum

Academic

MSc By Research, Computer Science

- University of Lincoln, UK (2015 – Present), as part of a scholarship funded by the EU ENRICHME project
- Research looks at the localisation of RFID tags using phase and frequency analysis
- A research paper produced from this work was peer reviewed and published earlier this year at the International Workshop on Intelligent Environments Supporting Healthcare and Well-being (WISHWell'16) in London
- An additional research paper from this project is currently under peer-review, and will hopefully be published later this year/start of 2017

Master of Computing, Computer Science

- University of Lincoln, UK (2011 – 2015) as an integrated undergraduate Master's degree
- Work included mobile app development, including the use of Microsoft Azure, RESTful APIs and OAuth
- Worked extensively with C# and .NET applications with Windows Forms
- Industrial project involved working with an external client to create a content management system, which included a backend SQL database and browser front-end with a strong emphasis on security
- 3rd Year (BSc level) project was a cross platform tool for streaming data between ports on a PC
- 4th Year (MComp level) project was the development of a wireless WAN capable router based on the Raspberry Pi

University Portfolio

Industrial Project

For my undergraduate degree, I had to partner with an external company to develop a piece of software for them. The company I worked with desired a content management system bespoke to their particular line of business. As part of this, I had to plan out with a member of their team how they imagined the software to be, and then use this to prototype, design a database, and develop a front-end using PHP and JavaScript. Security of the system was a priority. The project went through a number of iterations and garnered a lot of feedback which was used to improve the design, before eventually being accepted by both the company and the university as a requirement for my degree.

Raspberry Pi WWAN Router

Using the low-cost Raspberry Pi as a base, this project looked at the development of a network router. The utilisation of a modular NIC hardware platform allowed less common networking features such as Wireless WAN ports to be included. It also meant that users can arrange the multiple NICs to route data as they required. At boot, the system would detect the presence of NICs, and then guess suitable network configurations. A simple example would if the router detected an Ethernet port and a Wireless NIC, the router would 'guess' a configuration where the Ethernet port would be the WAN side of the network, although the user could change this if required. Additional features included proxy, DHCP and DNS servers, as well as all the usual features included on most common home routers.

Peripheral Port Multiplex Daemon

This project looked at the development of a desktop application/daemon to allow users to effortlessly stream data between PC ports. The program allowed users to take incoming data from multiple ports, potentially of different types (USB, Serial, Network socket (UDP and TCP), etc.), and then multiplex these streams together, with options for pre- and post- filtering. Once processed, the data could be distributed to any number of outgoing ports as required. The program utilised a complex architecture capable of dynamically organising itself for responsive and safe port handling. This ensured the program ran at minimal CPU and power levels whilst allowing it to be stable and keep running flawlessly even with port failures and crashes.

Work Experience

Maplin Electronics Ltd. November 2015 – Present, Part Time

- UK based electronic goods retailer, with an emphasis on components and technical know-how
- Product sales with a particular emphasis on getting the best possible solution to customers problems first time
- As part of the technical help team, provided specialised knowledge including circuit board fault finding and repairs
- Given extended responsibilities as a supervisor including managing staff, cashing up and counting the safe

Education Lincs Ltd. June – August 2014, Summer Placement

- Lincolnshire-based ISP and technical support provider for local schools
- Installed and configured equipment into schools according to regional governmental security policies
- Provided remote support via ticketing system as well as attending problems on site
- Handled sensitive and confidential client information in an active school environment

References and supporting documentation available upon request