Alexander D Brown

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I am an IEEE published author studying Software Engineering at Masters-level with an enthusiasm for teaching.
In previous workplaces I have often been praised for my enthusiasm and can-do attitude; often demonstrating I was able to work well independently, with a wide range of people; from school children to senior members of management.

Education

Aberystwyth University — Aberystwyth
Master of Engineering (MEng) Software Engineering — *2009 - 2014*

Awarded the Portaltech Reply Bursary in Computer Science for best performance in the penultimate year of the MEng scheme.
Produced a highly marked (78%) third year project entitled "Kyffin Williams: Digital Analysis of Paintings", which also resulted in a paper for the **8th International Symposium on Image and Signal Process and Analysis (ISPA)** entitled "Can we date an artists work from catalogue photographs?"
This paper was later presented at the conference in Trieste on 3rd September, 2013 and was co-authored with the project supervisor, Hannah Dee; a PhD student at the Aberystwyth School of Art, Gareth Lloyd Roderick; and a Professor of Digital Humanities at the National Library of Wales, Lorna M. Hughes.
This third year project was also presented the British Computer Society (BCs) Show and Tell event twice at Aberystwyth University, gaining good feedback from members of the audience including members of staff in the Computer Science department.
Produced and presented on the topic of industrial years and improving social media presence at a careers weekend run by the department to small groups of second year students intending to take industrial years themselves in November 2013, 2012 and 2011.
Volunteered as part of the Technocamps project at the university, teaching school children aged 11-15 year basic electronics and programming for them to be able to build semi-automated robots.
Have produced a number of programs relating to a range of subjects including: implementing Artificial Intelligence algorithms, developing RESTful services, solving complex problems and mobile development for both websites and native applications

Work Experience

Aberystwyth University — Department of Computer Science
Advisor — *September 2013 - Present*

Responsible for running a drop-in service to help students with understanding course material or extra-curricular projects. The majority of problems were related to debugging a variety of languages including PHP, C and Java. Other problems included software installation and theoretical understanding of programming paradigms.
Organised and taught half of a two day course to introduce first year students to basic programming

concepts including simple data structures common to most programming languages and flows of control.
Responsible for the sign-off of assessed worksheets in the practical sessions for two first year modules. The first of these modules focused on the use of the UNIX command-line environment and the second of these modules taught development of basic Java and Haskell applications.

IBM IBM Hursley
CICS Level 3 Service Tooling Engineer *June 2012 - July 2013*

Responsible for designing and developing useful Java-based tools for the CICS Level 3 Service team, including an eclipse plug-in to print out information required for code reviews and a large system to automate the delivery of fix patches for CICS Eclipse-based products, which hooked into many internal systems.
Helped gather requirements to apply to a system designed to be used by all Level 3 Service teams so that the CICS team would not be disrupted in their work and attended meetings to discuss the development of this system.
Maintained and improved several systems for generating statistics for problem reports and the processes for fixing these problems, including a Java Enterprise server and DB2 database hosted on a CentOS Enterprise Linux server.
Lead a team of three IBM employees to run a Java-master at Swanmore School of Technology, to get school children aged 13-15 years introduced to programming in the Java programming language at a basic level.
Helped teach several Java sessions internally within IBM to help members of the Level 3 CICS Service team and Industrial Trainees gain the skills and knowledge needed to use Java in their jobs. Mentored by an ex-lecturer from the University of Southampton to help decide the content of these sessions and the teaching style involved.
Organised the inductions for the 2012-13 intake of Industrial Trainees for their first two days at IBM, requiring the networking with both managers of each trainee to ensure they had the equipment and logins for their roles, as well as members of upper-management to present introductory talks at each of the three inductions. This was done as part of a team of three, with the help of industrial trainee and graduate managers.
Designed, built and tested a game based on the travelling salesman problem for school children to play on the Blue Fusion event, run over national science week. Worked as part of a team of five using Java with the AWT graphical library.
This game was also used as the event's finale, in which the AI agents the players produced were pitted against one another to determine which team had the best algorithm.

Aberystwyth University Department of Computer Science
Part Time Teacher/Demonstrator *September 2011 - May 2012*

Responsible for the sign-off of assessed worksheets in the practical sessions for two first year modules. The first of these modules focused on the use of the UNIX command-line environment and the second modules taught development of Java applications, particularly GUI-based applications using the swing libraries and multi-threaded programming paradigms.
In the December 2011 Staff Student Committee Meeting I was praised as an "excellent" demonstrator.
Contributed to the peer observation of teaching for demonstrators, giving feedback on how to improve the teaching methods of demonstrators and the process of the demonstration of practical sessions.

Programming Experience

Examples

Code for the following projects and other, smaller projects, has been made available at: `https://github.com/SoftlySplinter/` where possible.

Java

Used OSGi to develop a highly-modular Java system which automated the process of releasing fix packs of Eclipse-based tools, integrating several external services and APIs, some of which were known to change their API without warning. The purpose of using OSGi for this task was to allow the whole system to continue functioning if one service changed in a way which broke the code, or was simply unavailable at that time.
Have also developed Eclipse plug-ins, again using the OSGi framework, to improve workflow of the CICS Level 3 Service team.
Developed a simple program to simulate the flocking behaviour of birds and to show this behaviour graphically using the AWT graphical libraries.
Maintained and improved a Java EE application to automate the gathering of statistics running on a IBM Webspehere Server and using Java Beans to connect to a IBM DB2 database.

Python

Developed an open source python implementation of the tent protocol using the Flask microframework, with automated testing through Travis. The main focus was on the REST API for the server to meet the specification.
Built a command-line based tool which used OpenCV to perform a number of image processing analysis techniques, including colour-space analysis; texture analysis and histogram comparison, on a set of pictures. This analysis was then fed into a classification algorithm and used to perform validation of how well each analysis technique performed using statistical correlation.
Produced a command-line tool which used a genetic algorithm to solve the travelling salesman problem using a number of different crossover and mutation operators

C

Built an interpreter for an esoteric programming language based on the dwarf fortress game using the standard GCC libraries and including support for UTF8 character encoding. This also included a small suite of tests to ensure the language functioned correctly and Travis to automate these tests.

Volunteering

West Wales Linux Users Group

September 2013 - present

Organised and talked at two events for the West Wales LUG, one focusing on installing Linux on new students laptops and one on Linux editors.

Technocamps Technocamps Aberystwyth
Support Staff *October 2012 - December 2012*

Attended weekly club sessions to supervise activities for school children ages 11 to 19, which involved teaching the Arduino electronics platform, robotics and basic software development.

Battle for Wesnoth
Pixel Artist *February 2009 - July 2010*

Worked as part of a team of pixel artists to improve the art for the open source game "Battle for Wesnoth", which involved producing animation frames as well as giving and receiving critique.

Adur Canoe Club
Webmaster *September 2009 - August 2010*

Redesigned and maintained the canoe clubs website to improve the user experience. Primarily working with HTML, CSS and JavaScript, but also producing small PHP scripts based on the existing content to improve some of the functionality.
The current version of the website can be found at `http://adurcanoeclub.org.uk/` and although the design has changed slightly since the new webmaster has taken over, it still retains many similar elements.
Also served as a committee member during this time, attending regular meetings to organise the running of the club.

Adur Canoe Club
Instructor *September 2009 - August 2010*

Acted as the duty instructor for several club sessions, taking responsibility for the planning of the session and the safety of the kayakers on the water. Also acted as support for other duty instructors, either taking groups or acting as safety cover.
Also attended a meeting between all coaches in the club to improve the teaching done by all coaches and giving general feedback to individual coaches.

Server Administration

Debian Server http://alexanderdbrown.com/
Debian 6.0.7 *2011 - present*

Administered a personal VPS running a variety of services, including Nginx to serving static content as well as PHP using PHP-FPM (FastCGI Process Manager) and a WSGI implementation for testing Flask applications on a real server.
Primarily used for hosting a blog using the Python-based Pelican framework, which I have begun to contribute to.

CentOS Server IBM CICS L3 Service Statistics Server
2012 - 2013

Maintained and administered an in-house server which ran a Java EE WebSphere server which managed the automated collection of statistics for the CICS L3 Service management. This server also hosted a DB2 database for persisting this information.

Ubuntu-based Server IBM CICS L3 Service Sandbox
2013

Set up and maintained a testing server to help determine how the future versions of certain APIs would affect the CICS L3 Service tooling and to be able to react to such changes before the changes were implemented on the in-house servers.
This server was also used to host backup build engines for the in-house servers to allow some redundancy in the system.
The other use of this server was to test out the capabilities of what the system could do and how the work flow of the team could be improved through the use of newer features of this system.

Interests and Hobbies

I am an amateur photographer, my work can be found here:
`http://www.flickr.com/photos/softlysplinter/`.

I am a BCU qualified Level 2 Kayaking Instructor, with an interest in whitewater kayaking.

I play the drums and have achieved Grade 4.

I enjoy learning circus skills, including juggling, poi and staff manipulation.

I am beginning to learn the Iaido martial art through the Bujin-Ryu school of Iaido and Iaijustsu.