Curriculum Vitae: Joseph David Ruff

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Education

Loughborough University Leicestershire, United Kingdom
Computer Science BSc; Second Class Honours, Upper Division *2014 - 2017*

Part A (First Year): Essential Skills for Computing, Introduction to Algorithms, Logic and Functional Programming, Programming for the WWW, Server Side Programming, Computer Systems, Databases, Mathematics for Computer Science, Object Oriented Programming and Algorithms

Part B (Second Year): Requirements Engineering, Formal Languages and Theory of Computation, AI Methods, Computer Graphics, Formal Specification, Mobile Application Development, Professional Issues in Computing, Operating Systems Networks and the Internet 1 & 2, Team Projects, Professional Training Preparation

Part C (Third Year): Robotics, Enterprise Resource Planning Systems, Algorithm Analysis, Human-Computer Interaction, Data Mining, Cryptography and Network Security, Computer Vision, Computer Animation, Computer Science Project, Software Project Management

Ashcroft Technology Academy London, United Kingdom
GCSE & A level *2007 - 2014*

A2: Mathematics, B; Physics, C; Computer Science, B

AS: Biology, D

BTEC: level 2 Engineering, Distinction; OCR ICT, Merit

GCSE: Maths Applications, A*; Mathematical Methods, A*; Science, A; Additional Science, A*; English Language, B; English Literature, B; Citizenship (½), A; R.S (½), A; Geography, B; Music, C

Technical Skills

Familiar with:

Programming Languages: C, C++, Java, Haskell, HTML, CSS, JavaScript, PHP, Matlab, Visual Basic.net, Python, R (Tidyverse, ggplot), SQL

Source Control Systems: TortoiseHg (Mercurial), Git

ERP Systems: SAP

Data Mining Software: WEKA, R Studio

CAD Systems: PRO Desktop, 2D Design

Operating Systems: Windows (XP to Windows 10), Mac OS, Linux (Raspbian)

General Software: Microsoft Office (Word, Excel, PowerPoint etc.)

Work Experience

Medical Physics and Bio-engineering, UCLH Bloomsbury, London

Trainee Clinical Scientist: Bioinformatics (Physical Sciences) *Sep 2018 - Oct 2019*

UCLH: Involved working on small development projects for the department. One project was a tool developed with PHP and MySQL, that was designed to allow users to track different types of expenses across different budgets. These small scale projects exposed me to multiple programming languages during my time there.

HCA Rotation: Work at UCLH involved some short rotations out of my base department. One rotation was a 3 month stay at HCA Healthcare UK, working with the informatics team. Work involved using R with packages like Tidyverse and ggplot to extract information from HCA's patient data, and then to produce reports on my findings. One of these projects was to look into how quickly nurses respond to calls on the different floors, and on different shifts. Another involved finding duplicate patient records within the database, and finding which departments that are submitting the duplicates.

Ian Roscoe Garden Services LTD Richmond, London

Summer job *Jun 2016 - Aug 2016*

Gardener: Worked as a gardener for a company based in Richmond. This involved assisting one of the company owners and helping her perform her various day to day jobs for clients. Performed physically tiring tasks outside in varying weather conditions. Had to learn to perform tasks quickly and efficiently to maximise the number of clients seen in a day.

Mermaid theatre Blackfriars, London

International Magic Convention Gala Show *Nov 2013*

Stagehand: Worked backstage at international magic show. Had to learn various stage cues and instructions at short notice, and carry them out as part of a small team. Carried out important tasks effectively with a team whilst under pressure. Was able to work quickly to carry out tasks that needed to be finished within a time limit.

Medical Physics and Bio-engineering, UCLH Bloomsbury, London

Year 12 Work Experience *2013*

Raspberry Pi & Python: Was tasked with setting up a Raspberry Pi, and producing a python program to display a timetable. This involved me learning to code Python, as well as use a Raspberry Pi computer. Prior to this task being set I had only programmed in Visual Basic.net. Demonstrated ability to work with unfamiliar hardware and software, as well as learn a new programming language.

Medical Physics and Bio-engineering, UCLH Bloomsbury, London

Year 10 Work Experience *2011*

Cranioplasty plates: Took part in a full demonstration of how cranioplasty plates were made. Included use of bespoke CAD software as well as various workshop machines and tools. Demonstrated ability to use skills and knowledge learned in engineering class, outside of the school environment. Followed strict health and safety rules.

Repairing Keyboards: The bulk of my time spent at UCLH was spent repairing hospital keyboards. These keyboards were designed to be covered by a flat silicon surface to allow them to be easily cleaned. Repair process involved testing to see which part of the keyboard was broken, disassembling the keyboard, setting the broken components aside and reassembling the working parts into full keyboards. Demonstrated ability to quickly learn and perform a task.

Projects

HCA Healthcare call bell response audit: London bridge hospital, which is run by HCA Healthcare UK, has a call bell system in place for patients to request assistance from staff. The aim of the call bells is to reduce the chance of an accident, that may be caused by a patient trying to stand up and get something by themselves.
For this project I was given a csv file containing data on a months worth of call bells (over 8000 entries), and was tasked with seeing what information I could extract. The csv contained columns for: the area of the hospital, the room, the time of the call, the date of the call, and the response time.
Using R Studio, with Tidyverse and ggplot, I produced a report containing several plots. This included: a set of ecdf plots, indicating the performance against KPI (response time of <120 seconds), for each individual floor of the hospital; a box plot indicating the response time distribution by shift; a box plot and bar plot indicating call volume against response time; the distribution of calls over 5 mins, for every floor as well as the hospital as a whole; and a table of summary statistics for every floor and the hospital as a whole, including mean, median and range of the call durations, as well as the busiest hours of each floor (which hour has the highest call volume). Demonstrated ability to find and visualise relevant and useful information, as well as learn an unfamiliar programming language for the purposes of statistical computing.
Used Git source control system to manage updates and changes.

My final year project: Tasked with writing a program to visualise Conway's Game of Life and other Cellular Automata. Designed for usage at departmental recruitment events. Program had to be visually appealing and enable users to better understand cellular automata.
Finished program was written in Java to facilitate usage across multiple operating systems. Program features allowed user to pause, play, adjust speed, and manually go back and forward through each individual generation in the simulation. Other features allowed the user to visualise the changes that occurred in between generations and keep track of the number of living and dead cells. Simulations could be saved and loaded and the rules to Conway's Game of Life were not hard coded and could be changed in order to simulate other lifelike cellular automata. Demonstrated ability to learn an unfamiliar programming language, as well as program a functional animation engine.
Used TortoiseHg source control system to manage updates and changes.

A level project: Was a continuation of my year 12 work experience at UCLH. The task was to complete a timetable coded in python and run on a Raspberry Pi computer. Program appointment information from a text file and then displayed them on screen in

order of time. I made use of the pygame library to display text onto a screen and read from and write to a text file to get and store appointment information.
Required me to learn an, at the time, unfamiliar programming language and hardware.

Additional Information

Personal Profile and Skills: Both throughout my time in education and at work I have proven I work well in a team and on my own. I have always been good at using computers, both for completing work and playing games at home and with my friends. I enjoy playing games on both tabletop as well as the computer, I frequently organise whole days with my friends dedicated to playing board games. I've been playing classical guitar since primary school, and also enjoy listening to music.

Interests: Classical Guitar, Tabletop Gaming, Computer Gaming, Programming

References: Available upon request.