Michael Heasell

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I'm an ambitious software developer with a drive to produce quality work. I've won programming competitions and have exposure to a huge range of technologies. I work methodically and with attention to detail to deliver software you can count on.

Education

University of Bath

2009–2013

Degree
BSc (hons) in Computer Science with Industrial Placement

Classification
First Class

Placement grade
Distinction

Final Year Modules
Advanced Algorithms
Advanced Computer Graphics
Computer Algebra
Intelligent Agents
Intelligent Control and Cognitive Systems
Networking
Parallel Programming

Dissertation
Investigating Motion Planning Techniques for a Mobile Robot in 2D Space

Meridian School

2004–2009

A-levels

Computing	A
Mathematics	A
Physics	B
Music	B
Further Mathematics	C

GCSEs
9 GCSE passes at grade B or better, including A* in Physics and English Language.

Experience

Move GB, Software Developer — 2015–present

Worked on Move's website, mobile app and back-end systems with a team of local and remote developers. Expanded role to become the de facto system administrator responsible for Move's AWS account. Primary technologies included Perl, Mojolicious, MySQL, JavaScript, Cordova/Phonegap, Angular 2 and TypeScript.

Reduced AWS bill by 20% while adding capacity and new services including continuous integration (Jenkins), monitoring (StatsD/Graphite/Grafana), configuration management (SaltStack), a replica database (RDS/MySQL) and an additional demo/staging environment. Improved resilience to failure by automating server configuration and establishing disaster recovery procedures.

Dramatically improved code quality by introducing unit testing, code analysis, continuous integration, crash reporting and performance monitoring to Move's code base. Fixed a number of severe security vulnerabilities and worked to increase security awareness throughout the team.

Took responsibility for leading development of Move's mobile app after advising on key architectural and security decisions.

Refactored core billing and back-end code to allow Move to offer a much wider variety of memberships. Developed an interactive map showing available Move venues and which membership tiers include them.

IPL, Graduate Software Engineer — 2013–2014

Worked as part of an agile team to deliver web-based software for the Operational Riskdata eXchange Association (ORX), completion of which was critical to their continued success. Primary technologies included C#, ASP.NET (Web Forms and MVC), SQL Server, HTML/CSS/JavaScript, jQuery and knockout.js. Also provided estimates and assisted in breaking down tasks as part of the agile process. This was an important component as the project was under high pressure to complete.

Netcraft Ltd., Internet Services Developer — 2011–2012

Undertook a one year placement as part of my undergraduate degree programme, with an overall grade of distinction. Primary technologies included Perl, MySQL, HTML/CSS/JavaScript and jQuery.

Worked in a small team improving Netcraft's automatic phishing site classification system. Modernised Netcraft's phishing email reporting system and migrated it to a new server. Helped set up a Git hook to automatically deploy server configuration changes via Puppet.

Became solely responsible for a set of internal web forms used by non-technical staff to research web service providers as part of a larger project.

Technology Skills

Primary	Secondary
Perl	Java
JavaScript	Python
TypeScript	Kotlin
Angular 2	F#
HTML	Clojure
CSS	Sass
Linux	Apache
AWS	nginx
MySQL	SaltStack
C#	Jenkins
Git	

Activities

City Academy

2016

Played Prince Charming in City Academy's Christmas pantomime, Cinderella.

Musicals Society

2009–2013

Performed on stage in a number of musicals (including *Footloose*, *The Wedding Singer*, *Fame*, *Little Shop of Horrors* and the society's annual revue show, *Encore*). Worked closely with others as part of a team to perform scenes, songs and dance routines. Played lead roles in *Fame* (Schlomo Metzenbaum), *Little Shop of Horrors* (Audrey II) and *Encore* (various solo songs). Was a guitarist in the band for *Encore 2010*. In *Fame*, assisted the musical director in teaching the cast to sing chorus numbers.

University Chamber Choir

2009–2010

Sang bass, performing at Bath Abbey and other local venues. In 2010, maintained the the choir's PHP-based website.

Skills and Achievements

Competitions

In February 2017, placed 67th in the Halite competition, out of over 1500 entrants.[1] The task was to develop an AI player for a game in which players fight for control of a 2D grid. Learned Kotlin specifically for the competition.

In October 2015, won a month-long programming competition held by CodeCombat with 1345 entrants.[2] The task was a to develop the strongest AI player for a new game called Ace of Coders, in which two players fight for control of strategic points by summoning and commanding armies. My solution scored 1532 victories and 3 losses.

In April 2015, won a 10 day programming competition held by CodeCombat with over 180 entrants.[3] The task was to develop an AI player for a game called Zero Sum, in which two players attempt to kill the other player's avatar by collecting resources, using abilities and summoning and commanding troops. My solution scored 163 wins and only 1 loss.

In July 2014, won a three-week programming competition held by CodeCombat with over 500 entrants.[4] The task was to develop an AI player for a game called Greed, in which two players attempt to destroy the other player's base by collecting resources and summoning troops. In addition to winning the overall competition, my solution was entirely undefeated after simulations against over 200 opponents.

Projects

Developed a map editor for the RTS game Total Annihilation, called Mappy. Mappy is a complex Windows Forms application with undo/redo and image processing abilities. It has a small number of users with whom I have worked to identify bugs and areas for improvement. Mappy uses a library I developed, called TAUtil, to read and write Total Annihilation file formats. TAUtil is published separately and includes class/method documentation. Two additional projects, CheckTdf and SnappyMap, also use TAUtil to read and write data files.

Developed an toy online service for playing Hearts online in the browser using websockets. The front-end uses knockout.js and is driven by a Python/Flask back-end server.

Personal website and blog developed with Jekyll and hosted on DigitalOcean. Uses Sass to help keep the CSS maintainable.

Miscellaneous

Functional programming enthusiast familiar with immutability, higher order functions, monads and more. Keen to experiment with functional techniques in order to improve software architecture. For example, Mappy makes use of Rx, a library that provides a monadic Observable type and numerous combinators to work with them. Have also written side-projects using Clojure and F#.

Interest in internet security supported by experience at Netcraft. Excellent awareness of common security problems and how to defend against them.

Proficient Git user who values good commit messages and appropriately isolated changes. Good understanding of the the Git data structure, allowing effective use even in complex branching scenarios.

[1] `https://halite.io/user.php?userID=3372`
[2] `http://blog.codecombat.com/the-true-ace-of-coders`
[3] `http://blog.codecombat.com/kings-of-zero-sum-strategies-from-the-ai-wars`
[4] `http://blog.codecombat.com/a-31-trillion-390-billion-statement-programming-war-between-545-wizards`