Michael Heasell

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Ambitious software developer driven to produce high-quality work. Winner of programming competitions, in-depth knowledge of web technologies. Expertise in functional programming and type safety.

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

Technology Skills

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

Experience

JoinedUp, Senior Developer — 2018–2019

Worked to modernise JoinedUp's codebase to increase delivery speed and scale to support double the number of active users. Primary technologies included Java, PostgreSQL, CoffeeScript, TypeScript, React and node.js. Delivered internal talks on TypeScript, React and managing database migrations, and provided support for other developers.

G-Research, F# Developer — 2017–2018

Worked on a variety of tools and services to support research at the company. I am required to keep the details of this work confidential.

Move GB, Software Developer — 2015–2017

Worked on Move's website, mobile app and back-end systems as part of a mixed team of primarily remote developers. Expanded role to include managing Move's AWS account. Technologies included Perl, Mojolicious, MySQL, JavaScript, Cordova/Phonegap, Angular 2 and TypeScript.

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.

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

Improved code quality by introducing unit testing, static analysis, crash reporting and monitoring to Move's code base. Identified and fixed security vulnerabilities and worked to increase security awareness in the team.

Played a significant role in developing Move's mobile app after advising on key architectural decisions.

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 vital to their continued success. Primary technologies included C#, ASP.NET (Web Forms and MVC), SQL Server, HTML/CSS/JavaScript, jQuery and knockout.js. Provided estimates and helped to break down tasks as part of the agile process while the project was under 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.

Activities

City Academy

2016–2017

Played Prince Charming in City Academy's Christmas pantomime, Cinderella. Played Harvard student Aaron Schultz in City Acedemy's performance of Legally Blonde.

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

Developing Robot War Engine,[5] an open-source real-time strategy game engine compatible with Total Annihilation data, using C++ and OpenGL. Total Annihilation is a widely acclaimed RTS game released in 1997 with an active player base thanks to extensive community modifications. RWE will be capable of running existing mods for TA, extending their life and allowing mod makers to take advantage of new features.

Developed a map editor for Total Annihilation, called Mappy. Mappy is a complex Windows Forms application with undo/redo and image processing abilities. 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.

Miscellaneous

Functional programming enthusiast familiar with immutability, higher order functions, monads and more. Keen to employ functional techniques to improve software architecture, applying lessons learned from my professional work in F#.

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

Expert Git user who values good commit messages and appropriately isolated changes. Good understanding of Git internals (I once gave a talk on the subject), able to troubleshoot problems and address performance issues.

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