JOE HALLIWELL

Technical leadership ◇ System architecture ◇ Machine learning ◇ Big data

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EDUCATION

University of Edinburgh   1999 – 2007

· MSc in Artificial Intelligence
· PhD in Artificial Intelligence

University of Oxford   1995 – 2000

· MA in Mathematics and Philosophy

EXPERIENCE

Winterwell Associates Ltd   2008 – present

Winterwell is a machine learning and data analysis consultancy doing a mix of for-hire and internal R&D. As a lead consultant, I've worked on dozens of research projects across finance, media, defence, the public sector, education and agriculture. As a co-founder, I had special responsibility for business development, finance, partner and client liaison, devops/system administration and graphic design.

· Raised £300k in innovation funding, grew to 10 staff
· Clients include the Home Office, Mott Macdonald, the BBC, Tern Digital, API Software.

SoDash Ltd   2010 – present

SoDash is a social media monitoring tool which combines best-in-class coverage of the social web with a unique text classification engine. SoDash enables large brands to make sense of social media: segmenting traffic, finding leads and routing messages to the right people. As a founding director, I helped design and build the product, plus taken a lead in liaising with the commercial team, finance and devops/system administration.

· Raised £125k seed capital, grew to 20 staff in Edinburgh, London and San José.
· Clients include Harrods, Virgin Trains, HSBC, PepsiCo, University of Sunderland, Everest.

Edinburgh Robotics Ltd   2005 – 2008

As co-founder and CTO, I led a wildly ambitious project to develop a complete stack for mobile robotics from a Linux-based operating system through a peer-to-peer UDP-based network protocol and middleware library up to a 3D simulation environment built on the Open Dynamics Engine.

· Core libraries in C, plus C#, Python and Java bindings, plus amazing documentation.
· Raised £200k venture funding, £75k SMART innovation award, £125K SPUR commercialisation award.

University of Edinburgh, School of Informatics   2001 – 2005

I taught several courses at the School of Informatics which helped fund my seemingly interminable thesis write-up. I also devised teaching materials and maintained course websites.

· Taught AI2 (TA), Knowledge Engineering (Tutor), Knowledge Representation (Tutor), Prolog (Tutor and demonstrator), Third Year Large Practical (Tutor and TA), Operating Systems (TA)
· Static site generator for the AI2 website and a fun, interactive demonstration of the Festival speech synthesis system.

RECENT PROJECTS

Ad server
2012 - 2013
Lead developer *Java, Hadoop, HBase, Play, Bootstrap*

· High-performance, distributed, rule-based ad server built on the Akka actor framework
· Self-service management portal for campaign management, reporting, and analytics
· Probabilistic record linkage store and update algorithm built on Hadoop and HBase

The Thirty-Nine Steps
2012 - 2013
Lead developer *C#, Unity 3D*

· John Buchan's incredible espionage thriller was the debut — and the first ever — digital adaptation: a new form of interactive entertainment that merges literature, cinema and gaming. Whether you know The Thirty-Nine Steps inside out, or have never heard of Richard Hannay, this is the classic story as it has never been told before.
· Platforms: iPad, PC & OSX boxed, PC, OSX & Linux Steam; 20,000+ installs
· See http://thestorymechanics.com/digital-adaptations/the-thirty-nine-steps/

Buddhify
2012
Lead developer *PhoneGap, PHP, Java, Objective-C*

· The original version of the popular urban meditation app for modern life. Practical, playful and beautifully-designed, Buddhify increases your well-being by teaching you mindfulness-based meditation on the go.
· Platforms: iPhone, iPad, Android; 15,000+ installs
· See http://buddhify.com

TECHNICAL SKILLS

Programming Languages	Bash, C, C#, Java, Javascript, Lisp, PHP, Prolog, Python, Scala
Data storage	PostgreSQL, MySQL, SQLite, HBase, ZooKeeper, Hibernate
Web frameworks	J2EE, Play, vRaptor, Twisted, Node.js
Web client side	HTML, CSS, LESS, jQuery, Bootstrap, AngularJS, HighCharts, D3
Dev tools	git, Ant, Make, Maven, Doxygen, JUnit, Jenkins
Data analysis	csvkit, gnuplot, grep, SciKits, Weka
Distributed computing	Hadoop MapReduce, HDFS, HBase, YARN, ZooKeeper, Akka
Mobile & gaming	PhoneGap, jQuery Mobile, Unity 3D, iOS, Android
Operating System	Linux, GNU userspace, Apache, Cherokee, Ngingx, Exim, Postfix

PUBLICATIONS

J. Halliwell and Q. Shen, *Linguistic Probabilities: Theory and Application*, Soft Computing, 2008.

J. Halliwell, *Linguistic Probability Theory*, PhD These, University of Edinburgh, 2007.

J. Halliwell, J. Keppens and Q. Shen, *Linguistic Bayesian Networks for Reasoning with Subjective Probabilities in Forensic Statistics*, Proceedings of the Ninth International Conference on AI and Law (ICAIL'03), 2003.

J. Halliwell and Q. Shen, *Towards a Linguistic Probability Theory*, Proceedings of the 11th International Conference on Fuzzy Sets and Systems (FUZZ-IEEE '02), 2002.

J. Halliwell and Q. Shen, *Towards Temporal Linguistic Variables*, Proceedings of the 10th International Conference on Fuzzy Sets and Systems (FUZZ-IEEE '01), 2001.

J. Halliwell and Q. Shen, *From fuzzy probabilities to linguistic probability theory*, Proceedings of the 2001 UK Workshop on Computational Intelligence, pp. 129-135, 2001.