

Paul Hadfield

CONTACT INFORMATION

Based in London, UK.

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OBJECTIVE

A senior developer role in a close-knit team, developing meaningful products that make a real difference to their users, offering intellectual challenge, technical variety and the application of responsible software development practices.

PROFILE

I am a Software Engineer with over 25 years of professional development experience. I currently work in Monzo Bank's security group as a Backend Engineer in the Security Platform squad. We own the libraries that enable other teams to build Go microservices in a secure way. Previously, I worked in Google's security group on Certificate Transparency - an effort to increase trust in the Web PKI and to detect CA malfeasance or compromise. In 2006 I was one of Google's earliest SWE hires in the new London engineering office. I have start-up experience from two years at Songkick, one of London's first Silicon Roundabout start-ups.

SELECTED PROJECTS

For the *Google Transparency Report* I built a system to ingest millions of SSL certs from all known CT Logs, cryptographically verifying the Logs' correctness in the process. I designed the storage and serving layers, and implemented a front-end to allow users to search for certificates that might be served on their domains. This helps users understand whether mis-issuance of certs has occurred that could impact the safety of their users. The rewrite I did in 2019 using Spanner Queues hugely improved throughput and reliability of the search indexing aspect downstream of ingestion.

As part of *Google's AdSense Plugin for Wordpress* I implemented a feature to automatically place Ad Slots in users' Wordpress pages in locations recommended by an ML system. I did the back-end and front-end dev work. To determine if the recommendations were effective I designed an A/B experiment and performed a statistical analysis of monetization uplift. I then refocused the product to emphasize the aspects that performed best.

I built the back-end services for *Songkick's 'Detour'* crowdfunded concert product. I enjoyed being part of a small, agile dev team working in the early product discovery phase, with rapid cycles of building out new features, launching experimentally, measuring their performance through A/B tests and user studies and analysing data collected from the product. The ideas behind 'Detour' were quite disruptive, and it was exciting to see how the product resonated with users.

PROFESSIONAL EXPERIENCE

Monzo Bank Ltd., London, UK

Backend Engineer

February 2020 – current

- Backend microservice development - Golang, Cassandra, Proto, Kubernetes, AWS
- Front end tool development - Javascript, React, Next.js
- Security Operations rota - internal security advice/support, resolving alerts, various approval tasks

Google Inc., London, UK

Senior Software Engineer

November 2013 – January 2020

- Golang readability reviewer (2017-2019, volunteer basis)
- Trillian and Key Transparency (KT) - occasional open-source contributions (Golang), 2017-2018
- Certificate Transparency (CT) - Log Ingestion and Search (Golang, Python, SQL, Spanner, ST, Flume-C++, Pubsub2, Borg; on-call), 2016-2019
- Public work: contributions to Chromium (C++) and IETF's RFC6962-bis (CT v2), 2016-2018
- Transparency Report, HTTPS Certificate Search (Java, Javascript, Closure, Jasmine, HTML/CSS), 2016
- Certificate Transparency - Compliance Monitoring (C++11, Spanner, SQL, Borg, Proto, Stubby; on-call), 2015-2016
- Google AdSense Plugin (Java, Guice, Producers, FlumeJava, Javascript, Python, SQL, R), 2013-2014

Songkick.com, Inc., London, UK

Senior Software Engineer

August 2011 – September 2013

- Songkick Mobile Team, both iPhone and Android (Objective-C, iOS6, Java, Android, Tech Lead), 2013
- Data Science Team (Ruby, Python, Java, Hadoop/Pig, MongoDB, AWS S3, MySQL, Tech Lead), 2013
- Songkick Detour (Ruby, Rails 3, MongoDB, MySQL, AWS EC2), 2012-2013
- Songkick for Android - both client and server work (Java, Android, Ruby, Tech Lead), 2012
- Various back-end services for songkick.com (Ruby, MySQL, Redis, MongoDB), 2011-2012
- www.songkick.com features (Ruby, Rails, MySQL), 2011

Google Inc., London, UK

Software Engineer

January 2006 – August 2011

- Android Maps Local 'Hotpot' (Java, Android 4.0), 2011
- Android Market (Java, Google server-side and Android 3.0), 2011
- Mobile App Search (Java, C++, STL, Megastore, ST, Borg, FlumeJava; on-call), 2009-2010
- Google Mobile App (Symbian/portable C++, S60 3rd & 5th Edition, Tech Lead), 2008-2009
- Various unreleased products, Symbian/portable C++, S60 3rd Edition, various phones), 2006-2007

Symbian Software Ltd., London, UK

Principal Software Engineer

May 1999 – December 2005

- SyncML Device Management (DM)(C++, Symbian 9.1, Tech Lead, Architect), 2003-2005
- Representative for Symbian to Open Mobile Alliance, DM working group, 2004-2005
- HTTP Client (C++, Symbian 6.1-8.0, Tech Lead), 2001-2003
- WAP Browser (C++, Symbian 6.0-7.0), 2000-2001

Logica UK Ltd., Defence Division, London, UK

Analyst/Programmer, Consultant

October 1994 – April 1999

- Land Formation Model, a parallel discrete event simulation for DERA (C++/Solaris/CORBA), 1996-1998
- STAMGEN, land-based sensor simulation for DERA (C++/Solaris/ILOG Views/Geodetics), 1994-1996

Thorn EMI Electronics Ltd., Feltham, Middlesex, UK

Sponsored Student Engineer

September 1990 – August 1991, vacations 1992/93

EDUCATION

University of Cambridge, Churchill College, Cambridge, UK

BA (Hons) Electrical and Information Sciences (II.I)

September 1991 – June 1994

- Y3 (II.I): Analogue and Digital Electronics, Non-Linear Systems, Mathematics, Communications, Information Engineering, Computer Systems, Project: 'Stereo Vision with Finger Pointing for a Man-Machine Interface'
- Y2 (I): Circuits, Control Systems, Materials, Electronics, Computing, Thermodynamics, Fluid Mechanics
- Y1 (II.I): Electronics, Mathematics, Structures, Mechanics, Materials, Drawing

Coursera, www.coursera.org

2012 – 2017

- Technical courses: Bitcoin and Cryptocurrency Tech; Cryptography I; Statistics I, Introduction to Data Science; The Data Scientist's Toolbox; R Programming; Getting and Cleaning Data; Exploratory Data Analysis
- Non-technical courses: Technology of Music Production; Art of Music Production; Write Like Mozart

Beauchamp College, Leicester, UK

September 1986 – July 1990

- 2 'S' Levels (1, 2); 4 'A' Levels (AAAB), 10 GCSEs: (6A, 3B, C)

SELECTED AWARDS

London & Southeast Craft Beer Competition 2017 Gold Medal (Brown and Bitter category)

Google TI Award 2016; Peer Bonus x6 2008-2016; Spot Bonus, 2015, 2008

Institute Of Electrical Engineers Jubilee Scholarship to University, 1990

Thorn EMI Electronics Ltd. 'thick sandwich' sponsorship to University, 1990

PUBLICATIONS

Cipolla, R., Hadfield, P.A., Hollinghurst, N.J., "Uncalibrated Stereo Vision with Pointing for a Man-Machine Interface", *Proceedings of IAPR Workshop on Machine Vision Applications*, pp163 - 166, Kawasaki, 1994.

AFFILIATIONS AND RESPONSIBILITIES

Baritone sax and committee chair, King Groovy & the Hornstars band <http://hornstars.com>, 2015 –

Member of Open Rights Group, 2010 –

Member of CAMRA and volunteer podcast editor, 2004 –

Member of the IEE (now IET), 1991 – present; registered as CEng 2005 Member of the Incorporated Society of Musicians, 2019 –

HOBBIES AND INTERESTS

Music (sax, piano & hammond organ), recording (<http://soundcloud.com/hadfieldp>), home-brewing, hacking, electronics (built a synth and now working on a Picade bartop arcade machine), running, indoor rowing, family.

REFERENCES

Available on request.

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