

# Matthew Byng-Maddick

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Date of Birth : 26th July 1977

Marital Status : Single

Nationality : British Citizen

## Employment Experience

Jan 2016 -

### **Brandwatch**

Jun 2016

#### Contract Senior Systems Engineer

Hired to upgrade the HDFS and HBase versions for Brandwatch's existing installation, I built a completely new management platform allowing us to spin up and manage new clusters, and migrate to an install on the newest HDFS versions. We couldn't execute the planned HBase upgrade, because of application code changes and other priorities at Brandwatch. This management platform allowed easy spin-up and operation of different test clusters for Solr as well as HBase. I also introduced code-review to the systems team using Phabricator.

May 2014 -

### **Apple (UK Ltd)**

Dec 2015

#### Senior Big Data Operations Engineer

As an early part of the Hadoop SRE team at Apple, we had to take over the running of existing clusters and applications from vendor consultants. As our team grew we were supporting multiple services on MRv2 and Spark, built on YARN, HDFS and Azkaban. Using techniques from Facebook, I built advanced telemetry to get and visualise high-quality data about the operation of the clusters. I also started to design and prototype a scaled monitoring system based on what I'd seen and learnt at Facebook.

October 2012 -

### **Facebook, Inc**

February 2014

#### Production Engineer

I was part of the team managing the operational side of Facebook's production infrastructure for its HBase databases. These databases were the data storage for the 10bn+ messages a day in Facebook's messaging and chat application, and for much of the internal monitoring data. As well as ongoing maintenance, we built software to detect and remediate problems earlier and in more automated ways, and to better allow us to monitor and tune and configure the databases.

April 2008 -

### **British Broadcasting Corporation**

August 2012

#### Systems Engineer/Technical Architect (Senior Software Engineer)

During 4 years at the BBC, I started on their post-broadcast VoD service (iPlayer), and then moved to consult on all areas of the BBC website. On iPlayer, I designed and implemented systems relating to content publishing, statistics and DRM licensing, and across the BBC I rolled out a refreshed implementation of the Zenoss monitoring, and consulted in systems design and operational supportability for product owners, as well as trying out new designs for the website as a whole.

March 2005 -

### **Venda Ltd**

April 2008

#### Senior Developer / Senior Systems and Networks Administrator

I started off as a developer on the Venda codebase, and having worked extensively on optimisations and new features, was able to move, in October 2006 to their Systems team. There, I helped implement several network improvements, as well as leading operational maintenance tasks, and engineering several new systems.

April 2001 -

### **The Bunker (previously A L Digital)**

March 2005

#### Software Developer and Network Manager

In nearly 4 years at A L Digital (now replaced by The Bunker Secure Hosting), I was involved with many projects, many concerned with security, and later on in terms of building and maintaining networks and network devices. As a programmer, I was involved with security, both writing SSL libraries and doing security reviews (including one on OpenSSL), as well as web application work carried out by A L Digital.

July 1999 -

### **Codix.net**

April 2001

#### Software Developer and Systems Administrator

In July 1999, I helped Alex Nunes start up Codix.Net (since, a part of Venus Internet) by setting up the internal network, procedures and development environments. I wrote much of codix's infrastructure, including a small templating system, a cryptographic session-management system, and I co-wrote a small-scale fast search engine. I was also involved with much of the web application work done by codix.

August 1998 -

### **Transaxion**

October 1998

#### Freelance Software Developer

August 1995 -

### **STC Submarine Systems / Alcatel Submarine Networks**

October 1996

#### Trainee Engineer

## Publications

February 2002

### **Keyman: Trust Networks for Software Distribution** (not peer-reviewed)

Presented to: Workshop on Open Source Software Development

## Education

October 1996 - **Selwyn College, University of Cambridge**  
June 1999 **Natural Sciences (Physics) MA**  
Part Ia - (I), Part Ib - (II.2), Part II - (III).

August 1990 - **Westminster School**  
July 1995 STEP / S-Levels (3 Is, 1 II), A-Levels (4 As), AS-Levels (1 A), AO-Levels (1 A), GCSEs (6 As, 4 Bs)

## Computer Experience

Familiarity with:

- POSIX, and the UNIX Programming Environment (and ANSI C)
- The GNU C Compiler, linker and GNU and BSD make
- Linux (mostly RedHat-derived (experience building packages with RPM)), FreeBSD, Solaris
- Hadoop, YARN, HDFS and HBase
- Apache Zookeeper
- Python language
- The Go language and gccgo
- Shell Scripting
- Puppet configuration management
- git, Github, Github Enterprise, and Phabricator and Github pull-request based code review
- SQL and some DBA (MySQL/PostgreSQL)
- The DNS and some DNS server configuration and management
- Monitoring, telemetry and the use of kernel, JMX and application metrics
- Load-balancing techniques (global (DNS), L3 (and L3 DSR) and L7)
- Techniques for building high-availability systems

Exposure to:

- Solr, Solrcloud and Solr on HDFS
- Perl, Ruby, Java, C++ 11
- Chef configuration management
- Apache Spark
- IOS, Routing, IPv4, TCP, Firewalling on PIXes and ASAs, OSPF, BGP
- The Apache Webserver and some of its internals, the nginx webserver
- SMTP, IMAP, and mail configuration (and some Exim internals)
- Varnish cache (and some of its internals)
- Other code management (eg CVS, SVN)
- Cryptosystems and the OpenSSL Cryptographic Library
- SNMP v1, v2c and v3
- ZFS and DTrace

Published free software:

- Crypt::Blowfish\_PP

## Other

As well as the above, I have co-written and maintain a mail-based interface for registering domains using Tucows' OpenSRS system.

## Referees

Please contact me for addresses of referees.