Andrew Francis

Senior Developer at HealthEngine

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Summary

Full stack software developer. Some management experience, but I prefer working as an individual contributor.

Simultaneously interested in products which are applicable to everyday people, and low-level work. Currently working at HealthEngine in Australia, primarily on backend code with healthy side serves of devops and HTML5.

Particularly interested in data representation and performance optimization. I write SSE intrinsics for fun.

I'm Australian, and willing to relocate internationally.

Github profile: https://github.com/andrewffff?tab=repositories

Projects

aussieradio.net
2012 to Present
Members:Andrew Francis

Spotify links for what's playing on Australian radio stations right now. It's pretty cool. (node.js, Postgresql)

AfUtf8
2012 to Present
Members:Andrew Francis

AfUtf8 aims to be the fastest UTF-8 validator out there. Its built around a UTF-8 validation model which can be vectorized using SSE on modern x86 processors. utf8fuzz is a testing and benchmarking framework for AfUtf8 and many other UTF-8 validators. (C++)

watch-make
2012 to Present
Members:Andrew Francis

GNU Make dependency watcher. It's a bit like guard, nodemon or node-supervisor (from the Ruby and node.js worlds) but for any task which has a Makefile. (node.js)

Experience

Senior Developer at HealthEngine
August 2011 - Present (1 year 8 months)

From 2012, HealthEngine has made it possible for Australians to find and book appointments at health practices across the country. HealthEngine is now the leading site for finding and booking health appointments, offering more times, practices, and coverage than any other service.

HealthEngine has operated since 2006 as a medical provider directory. I was brought on to bootstrap the new Appointments product, including:

* The backend responsible for storing available appointments and making them available as search results and suggestions. (Integrated into existing PHP / Postgresql codebase)

* Management website used by medical practices to administer published appointments. (PHP, HTML, JS)

* Desktop "sidebar" which allows practice staff to manage HealthEngine availability alongside their existing practice software. (Qt / C++ / WebKit supporting Win2K and up.)

* A Windows Service which integrates with several medical practice software packages to sync appointment information between HealthEngine and the practice's own appointments database. (Qt / C++)

* Realtime notification infrastructure (node.js, socket.io and Postgresql notifications.)

I now work on maintenance and improvement of the Appointments system, and the internal analytics and database management tools used by HealthEngine staff. I also do ops work, including primary responsibility for:

* Performance guarantees and optimization for the entire HealthEngine application.

* Provision of new server infrastructure.

* Implementation of a backup system and disaster recovery plan.

Software developer and consultant at   Andrew Francis
January 2001 - Present (12 years 3 months)

Various contributions and freelance work.

In 2011-12 I was the primary C++ developer on a prototype forex trading system. I developed a data storage system for historical trading data and performed experiments over it using various statistical techniques. Much attention was paid to performance, to enable rapid iteration and in anticipation of eventual use as a realtime system executing trades. I also developed visualisation tools. (Qt / C++)

Some other, distant, items of note: I wrote the VNC support for osx2x (https://github.com/mdales/osx2x), contributed simultaneous loading of multiple keys to PuTTY / Pageant, and wrote the DumpState debugging

plugin for the NSIS Windows installer creation system.

Head of Development at   CalorieKing
January 2008 - June 2010 (2 years 6 months)

CalorieKing.com is a weight loss website which combines a wealth of publicly-available content with an online-only subscription weight loss program. 2008-9 were an inflection point for the business, and work done during this period led to TIME Magazine naming CalorieKing one of The 50 Best Websites of 2011. http://ti.me/nfeWK6

I was the technical lead, responsible for all technical architecture, and a development team. I reported to the COO and liaised daily with product managers and the ops team.

I spent most of my time on:

* Personnel management of a team of software engineers with varying degrees of experience, including hiring, day-to-day management and regular review.

* Working with non-technical product managers to design features for a web-based product.

* Management of the SDLC for the company's online product.

* Project management within my team.

* Design and implementation of process and controls to improve quality and comply with regulatory requirements (including the PCI-DSS credit card industry standards). Establishment of an automated testing regime.

* Liaising with technical and non-technical contacts at business partners.

* Code review

* Formulation of business reporting and A/B tests
1 recommendation available upon request

Team Lead - Technical Infrastructure Team at   CalorieKing
March 2007 - January 2008 (11 months)

Leader of a small team working on longer-term projects than the company's web development team. Eventually the company consolidated all development under my management.

This was, hours-wise, a primarily technical role. Some of the things I worked on:

* Developing improved search algorithms for CalorieKing.com's food database.

* Evaluation of JavaScript toolkits, for the purpose of modernizing CalorieKing's web product.

* Lead developer on CalorieKing's new "Web 2.0" food diary

* Built a Javascript and CSS minification pipeline.

* Performance benchmarking and optimisation, including heavy use of PQA for Postgresql. I developed a tool to highlight deviations in query plans following Postgresql upgrades.

* Planned the migration of CalorieKing's web product from PHP4 to PHP5. Made alterations to the PHP4 core to warn about behaviour which would change following the move to PHP5.

* Made CalorieKing's food database available via a web service. This included establishing pricing, determining functionality, implementing usage accounting which could survive temporary disconnection of separately-located redundant servers, and the delivery of an SDK including documentation and sample clients in multiple programming languages.

Developer (later Lead Developer - Software) at   CalorieKing
April 2001 - February 2007 (5 years 11 months)

Development duties on CalorieKing's software for Windows, Mac, PalmOS and PocketPC. Most of the code we shipped was in C / C++, and most of our internal tooling was in Python. We made heavy use of Qt and SQLite for the desktop products. We provided a plugin for Palm's "Hotsync" software, and provided some integration points for third-party software via COM.

I built an automated release pipeline to produce downloadable executables, and CD-ROM images which were manufactured into a boxed product.

Over time I was promoted to Lead Developer and was responsible for:
* Personnel management, hiring and quarterly reviews for my small team
* Feature specification and requirements gathering
* Competitor analysis
* Eventually most aspects of product marketing, including the website, promotions and pricing.
* Greenfield development of new software products.

Computer Support Officer (Electrical Engineering Dept) at   University of Western Australia
2001 - 2002 (1 year)

Technical support and system administration of staff and student computer systems.

Volunteer Experience

Secretary & Executive Committee Member at Bur.st Networking Inc
October 2003 - June 2012 (8 years 9 months)

Bur.st was a non-profit organisation dedicated to the provision of free online services such as e-mail, website hosting, and Linux shell access for educational purposes. Bur.st was run entirely by volunteers and private donations from members, and at its peak provided services to thousands of Australians daily.

By 2011, continued operation as a standalone entity had become unsustainable. The executive committee arranged for the non-profit Western Australian Internet Association to provide continued operation of the services to remaining users.

Organizations

Association of Computing Machinery
Professional Member
2004 to Present

Western Australian Internet Association
Professional Member
2012 to Present

Skills & Expertise

Linux
JSON
MySQL
C++
Optimizing Performance
Data Compression
Debian
PostgreSQL
Node.js
PHP
Varnish
Web Services
jQuery
Web Development
Open Source
Agile Project Management
Git
Pound
Subversion
Product Management
A/B testing
FreeBSD
Systems Programming

Technical Communication
Shell Scripting
SQLite
HTML 5
x86 Assembly
Selenium Testing
User Experience
Unix
Ubuntu
Nginx
Apache
Puppet
DevOps
Sendmail
Web Applications
AJAX
C
JavaScript
Python
SQL
HTML
TCP/IP
POSIX
Tcpdump
WebSockets

Education

Curtin University of Technology
Bachelor of Science (B.Sc.), Computer Science, 2000 - 2002

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Linked in.

1 person has recommended Andrew

"I've had the privilege of working with Andrew for over 7 years and can only say that he is one of the more extraordinary individuals I've met. From a technical point of view, in both breadth and depth, he is one of most capable software engineers I have met, and I've been lucky to work with an extremely talented group generally. More impressive though, is his ability to get the job done; to pragmatically manage both himself and his team. Andrew's proven ability to execute, on top of his top-notch technical ability is what makes him a valued member of any team."

— **Adam Yap**, *Chief of Operations and Business Development Solutioning, CalorieKing*, managed Andrew at CalorieKing

Contact Andrew on LinkedIn