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Ben Hoyt's CV / Resume

Intro: I currently work for Oyster.com (part of TripAdvisor) in New York City. So I'm not looking for a job at the moment, but we may want to hire you!

Summary

I'm a software engineer with twelve years of experience developing web applications and embedded firmware, as well as providing technical oversight for small teams of software developers.

I'm fluent in Python, C, SQL, HTML, and English. I've also written a good amount of C++, C#, Objective-C, CSS, JavaScript, and x86 assembly. I learn quickly, care about detail, and love computers and mathematics.

Skills: what I do...

- Develop **websites** that perform well and are easy to use. I've used various languages and databases, and I'm experienced with the scaling and caching required for large-scale websites (1M pageviews per day).
- Create **native iOS apps** for iPhone and iPad devices. I'm familiar with all aspects of app development from design to code to the App Store.
- Contribute to **open source** projects, for example Python (more here).
- Administer **web servers** and automate complex code deployments on Windows or Linux.
- Write **desktop tools** and automated test software.
- Develop **embedded firmware** for data loggers, control systems, and other electronic devices, using 16-bit and 32-bit microcontrollers.
- Manage and provide **technical leadership** for small teams of software engineers, and oversee product development.
- **Communicate and document** effectively and relate well to people. I also design, write specifications for, and manage projects.

I have also discovered a truly marvelous proof of Hofstadter's Law, but unfortunately this margin is too narrow to contain it.

Experience

Oyster.com / **TripAdvisor** – Software Engineer and Technical Manager – June 2010 to now:

- Managed a small team of software developers. Oversaw architecture decisions and performed code reviews for most of Oyster's software projects. Led the hiring of new software engineers.
- Ported the entire C++ web backend (which produced static HTML pages) to Python (which renders all pages dynamically). This allowed us to develop and release business-level features much more quickly.
- Wrote code and tools to internationalize and localize the entire website, including automatic translation of hotel reviews via translation APIs.
- Implemented many web-based internal tools, including a photo album editor and a workflow system to help salespeople schedule photoshoots at hundreds of hotels per month.
- Helped design and implement a custom content management system that enabled us to publish hotel reviews realtime. The CMS is also used to write content roundups, slideshows, and blog articles, which increased revenue and provided a more integrated user experience.
- Implemented a data analytics pipeline using Snowplow, Amazon Redshift, and Looker. The system stores and can query almost 1B rows in a few seconds.
- Co-developed Oyster.com's photo-rich iPad app, including the app's Objective-C codebase and its API backend.
- Wrote Python and JavaScript libraries to display real-time pricing via TripAdvisor's hotel pricing API, resulting in a sizeable revenue increase.
- Implemented the backend for Oyster Shots, a tag-based photo search engine for 1M+ hotel photos. This was turned off in 2014 for business reasons, but you can read more here.
- Wrote much of the site's user account and hotel booking system (turned off in 2011 for business reasons), including secure credit card and payment handling.
- Co-wrote heavily parallelized software to resize and watermark millions of images in many different sizes using Amazon EC2.

- Supervised and administrated the datacenter's server and database configuration. Automated server setup and code deployments using IT automation tools such as Ansible.

Brush Technology – Software Engineer and Co-director – August 2006 to May 2010:

- Co-founded and designed the microPledge crowd funding website, and developed about a third of its codebase (in Python and PostgreSQL). microPledge implemented secure financial transactions, advanced Ajax-based voting, and scaled to thousands of campaigns and users.
- Designed, implemented, and promoted Gifty Weddings, a website that helps couples make great wedding gift registries.
- Wrote embedded firmware in C++ for Hamilton Jet's large-scale jetboat control systems. Wrote testing and GUI tools in Python and C#.
- Worked on cellular telemetry firmware and GPS interfaces using Atmel AVR and ARM7 micros for various clients.
- Developed low-latency IP networking software in C and Python for a client in the high-frequency trading industry.
- Wrote articles for our programming blog, for example, on Knuth, protothreads, and bloatware.
- Managed projects and staff. As a cofounder, I was also heavily involved with the company's business planning and decisions.

Harvest Electronics – Software Engineer – October 2002 to July 2006:

- Designed and developed the web and admin interface for their solar-powered weather stations – the clean UI and weather graphs really made Harvest's product stand out. Wrote software to interface to the GPRS modems and administered associated databases and web servers.
- Wrote embedded firmware in C and assembler for MSP430 and ARM7 micros, including low-level boot loaders, serial and radio comms, digital audio, and I/O control logic.
- Developed various network and serial comms tools in C, C++, and Python. Worked heavily with the Win32 API.

Education

I have a B.E. in electrical and computer engineering, and graduated from the University of Canterbury in 2002 with first class honors, GPA 7.9/9. For my final-year project I designed a small stack-based CPU in VHDL.

About me

My dad taught me how to program by teaching me the Tao of Forth. Two of my first projects were writing a Forth compiler in x86 assembly, and then writing a small 32-bit OS in my Forth. I love things small, fast, and light – and that's paid off, especially in my embedded work.

Other than that, I enjoy reading and writing, and I edited and designed a small-scale magazine. I'm into unicycling, typography, and piano. I love my wife and family. I aim to keep the commandments, but you may find me breaking the conventions.