Bobby Powers

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Easthampton, MA 01027 `http://bpowers.github.io` *Dec 9, 2014*

Recent Employment

Software Architect, *SocialCode* Jan 2014-Jun 2015

I am responsible for the service-oriented architecture of a social media advertising platform used by one-third of the Fortune 100. Technical challenges include designing for growth, system boundary identification, and distributed systems. Non-technical challenges involve coordinating development efforts of a 30 person dev team and working with product managers to turn designs into scalable and maintainable systems. Most recently I've worked to minimize latency and improve accuracy in our client-facing reporting system.

Lead Software Developer, *isee systems* Apr 2013-Oct 2013

I was responsible for implementing and improving core aspects of the company's code base. This included implementing a custom Objective-C tiling view to crisply render diagrams at any level of magnification (and while zooming) in a memory efficient way. I was instrumental in stabilizing and speeding up isee's C++-based simulation engine, resulting in order-of-magnitude speedups and memory reductions in several areas. Finally, I fixed a number of issues in isee's legacy codebase, carefully identifying root causes of subtle problems and understanding the implications of fixes.

Dev Lead, Developer & Tech Operations Interim Lead, *SocialCode* Jan 2012-Mar 2013

I managed, implemented, debugged and scaled key systems at SocialCode, serving as team lead responsible for key parts of SocialCode's advertising platform. I also served as interim lead for the operations team, which builds and manages the 100+ server, EC2-based infrastructure. I designed and implemented a production service that handled more than 60k HTTP requests per hour with 99.999% availability in Go. Additionally, I was one of two recipients of the first 'Stellar SocialCoder' quarterly award recognizing significant (positive) impacts on SocialCode.

Simulation and Software Developer, *Forio Online Simulations* Jan 2010-Dec 2011

I was integral in scaling out, stabilizing and developing new features of Forio's Java-based platform for online, interactive learning environments. I designed and implemented a clustered configuration of our platform for an event serving all 800+ incoming MBA students at the Wharton School of Business, which performed flawlessly. Later, I worked on pulling a native-library dependency out of our webapp and into a standalone service written in C. This enabled us to move to 64-bit JVMs and removed a frequent source of app server crashes, while simultaneously reducing memory and resource usage.

Selected Publications

Andrea M. Bassi, Robert Powers, and William Schoenberg. An integrated approach to energy prospects for North America and the rest of the world. *Energy Economics*, 32(1):30–42, 2010.

Charles Hall, Robert Powers, and William Schoenberg. Peak oil, EROI, investments and the economy in an uncertain future. *Biofuels, Solar and Wind as Renewable Energy Systems*, pages 109–132, 2008.

David Murphy, Charles Hall, and Bobby Powers. New perspectives on the energy return on (energy) investment (EROI) of corn ethanol. *Environment, Development and Sustainability*, 13:179–202, 2011.

Jason M. Townsend, Charles A. S. Hall, Timothy A. Volk, David Murphy, Godfrey Ofezu, Bobby Powers, Amos Quaye, and Michelle Serapiglia. Energy return on investment (EROI), liquid fuel production, and consequences for wildlife. In J. Edward Gates, David L. Trauger, and Brian Czech, editors, *Peak Oil, Economic Growth, and Wildlife Conservation*, pages 29–61. Springer New York, 2014. ISBN 978-1-4939-1953-6. doi: 10.1007/978-1-4939-1954-3_2. URL `http://dx.doi.org/10.1007/978-1-4939-1954-3_2`.

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Education

Masters in System Dynamics, *University of Bergen, Norway* Jan 2008-Dec 2011
GPA: 3.9
Coursework Summary:

- System Dynamics Modeling
- Interactive Learning Environments
- Development Planning

Thesis: An Object-Oriented Approach to Managing Model Complexity <`https://s3.amazonaws.com/bpowers/thesis.pdf`>
Summary: System dynamics is teaching me how to understand complex systems and help others to do the same.

B.S in Environmental Studies, *SUNY College of Environmental Science and Forestry* Jan 2005-Dec 2008
GPA: 3.5 magna cum laude
Coursework Summary:

- Ecological and Geographical Modeling (Fortran, C#, C++) and GIS (IDRISI, ArcGIS)
- Ecology and Biophysical Economics
- Policy Analysis

Summary: At ESF I learned how to apply my passion and talent for computers towards answering relevant questions.

Computer Systems & Electrical Engineering, *Rensselaer Polytechnic Institute* Aug 2002-May 2004
(transferred to SUNY ESF)
Coursework Summary:

- Software Development (C++) and Engineering Design
- Management Principles

Summary: At RPI I learned engineering rigor and the basics of managing successful projects.

Skills

langs 1	⁝C, ⁝Python, ⁝Go, ⁝Javascript, ⁝C++	langs 2	⁝bash, ⁝Java, ·Scheme, ·x86 asm
2.6+ kernel	·MM, ·VFS, ·arm	build	⁝GNU Make, ·autotools, ⁝maven
protocols	⁝http, ⁝redis, ⁝sftp, ·ssh	scm	⁝git, ⁝svn, ⁝hg
web	⁝MySQL, ⁝HTML, ⁝XML, ·CSS	libs	⁝glibc, ⁝gobject, ⁝GTK2, ·LLVM, ·Yacc
		legend	⁝expert, ⁝proficient, ·familiar

Projects

Programming, *various* 2002-present

I have worked on a personal music serving platform, command-line utilities, compilers in C, Python and Clojure, a Win32 minesweeper implementation in assembly, several network protocols, robotic control software, a flash pie-chart library, and numerous one-off scripts for myself and friends.

I've contributed bug fixes to the Linux kernel, Git version control system, Go programming language, and numerous smaller free software projects. I was a contributor on the Apache MINA project, supplying a number of fixes to the Java sftp implementation. I like to leave things better than how I found them.