Curriculum Vitae

Dave "wilkie" Wilkinson II

I develop large scale distributed systems and am looking for a position that will allow me to use that specialization to make better the open web. I have a strong desire to develop technology that can be accessed by anybody and push progress of a public commons without constraint. I specialize in the research and development of low-level distributed systems that reduce barriers of entry and push more control, authority, and rights to those that use the system. My overall goal is to provide a system that guarantees the freedom to compute.   **blog:** http://wilkie.io   **code:** http://github.com/wilkie

Education

College: University of Pittsburgh, 2005-2009, GPA: 3.7
Degree: Bachelors with Honors, Computer Science
Post-Bachelors: Graduate Study in CS, University of Pittsburgh, 2009-2012, GPA: 3.8

Speaking

Operating System Fundamentalism – *SOSP 2011* – Stressed new concerns and models for modern OS/kernel architectures to an audience of established systems researchers at a top systems conference. *Paper*: http://sigops.org/sosp/sosp11/posters/summaries/sosp11-final39.pdf

XOmB+Djehuty: Platform for Code Remix – *CSA 2013* - Discussed an operating system architecture that promotes better diversity and involvement of non-systems people in its creation and maintenance and how to promote better code reuse. Afterward, my co-speaker and I were invited to help plan and review proposals for the panel for next year.
Slides: https://speakerdeck.com/wilkie/xomb-plus-djehuty-a-remix-os-for-computation-liberation

Social Computation and the Freedom to Compute – *PGHTechFest 2013* - A political view of the open source culture and how it actively discourages participation from the commons and is driven from a centralized, authoritarian development model and new models of systems that would solve these problems. *Slides*: https://speakerdeck.com/wilkie/social-computation-the-freedom-to-compute

Writing

XOmB: an Exokernel for Modern 64-bit Multicore Hardware - *WSO - VII Workshop de Sistemas Operacionais* - Belo Horizonte, Brasil - July, 2010. Describes the system architecture, technical merit, and novelty of a new kernel built without the legacy of prior abstractions.
Paper: http://www.inf.pucminas.br/sbc2010/anais/pdf/wso/st02_02.pdf

Balancing Performance, Accuracy, and Precision for Secure Cloud Transactions - *IEEE Transactions on Parallel and Distributed Systems* - August, 2013. Proposes new database consistency algorithms for emerging distributed data solutions to account for finer-grained privacy control within an eventually consistent environment. *Paper*: http://wilkie.io/images/cv/TPDS_revision.pdf

Studying Speedrunners - *Game Developer Magazine* - March, 2013. A look at the bugs in the popular game DOOM that have been discovered over the years by enthusiast players. I examine the released source code to explain why certain tricks work and discuss why having bugs in your games can be part of its appeal, not a drawback or mistake.
Article: http://gamedeveloper.texterity.com/gamedeveloper/201303?pg=57#article_id=262899

Teaching

Introduction to Java - Instructor, University of Pittsburgh - 2010-2011 - 3 consecutive semesters, above-average student-evaluated teaching rating. Beginner level Java programming for non-computer-science majors. Had full control over curriculum and planning devising homework assignments and exams. My curriculum experimented with interweaving computer art and culture into the discussion.

Introduction to Systems - Lab Instructor, University of Pittsburgh - 2011-2012 - Taught for 2 semesters. Taught C to computer science minors/majors with an emphasis on systems and low-level programming. Included labs on Makefiles, filesystem programming, and adding system calls to Linux.

Open Source Game Coding Competition - Event organizer - 2009-present - Yearly competition, around 30 participants per year devoted to beginners to motivate them to form teams with experienced programmers to pair and build video games. My responsibilities are to fund the event through sponsorship, advertise, organize judging, and make sure everybody is having fun. *Website*: http://osgcc.github.io

Work Experience

Software Engineer – *Vocollect* - 2008 - Worked on their flagship product, a hand-held, voice-activated, programmable device typically used for warehouse workers or carriers for hands-free inventory. Embedded C/C++. Rewrote and optimized very low-level, core pieces of code.

Freelance Work – 2009 - Implemented a contract work within the period of two weeks to develop an iPhone application generator for the syndication of RSS/Atom feeds of audio/video podcasts into a custom styled app used to play the various episodes.

Student Researcher - *University of Pittsburgh* - 2009-2012 - Researched operating system designs and distributed systems with an emphasis on building new systems.

Teaching Fellow - *University of Pittsburgh* - 2010-2012 - Responsible for curriculum in introductory programming courses. *See Teaching section*.

Software   (To see a more thought-out description of my work with images, go to http://wilkie.io/posts/cv)

rstat.us – *Web Application* – ruby/rails, javascript/coffeescript – Open-source, federated microblogging platform I founded with a few friends. Distributed twitter that emphasizes personal use and self-ownership of data by being easily self-hostable. I maintain the code with 60+ contributors from all across the world.

lotus – *Web Framework* – ruby/sinatra, javascript – Created from experience working on rstat.us, this open-source framework makes it easy to develop federated web applications for the open web. I have developed several small applications for distributed microblogging, image sharing, and traditional blogging.

XOmB – *Operating System Design and Implementation* – D, C, x86-64 assembly – novel open-source exokernel-inspired kernel motivated to provide a modern, yet tiny and flexible base for building new systems. Our design pushes much of the control and authority, such as device drivers, to user-space.

reuleaux-selectors – *User/Human Interfaces* – javascript – Being concerned with forms of available representation and diversity in the tech space, myself and a colleague developed a new form of selector for gender and sexuality representation. It allows for more than two choices, but values are also comparable. Open source. *Try it out:* http://wilkie.github.io/reuleaux-selectors/

gutenberg – *Content Generation* – ruby, js/jQuery – Generates HTML for books from markdown. Emphasizes accessibility and explores non-traditional media (hypermedia) layouts. Open source.

apsis – *General Purpose Game Engine* - C++, assembly, GLSL – Open source game engine project to hone my systems skills that is adaptable and modular enough to build many forms of game engines from it.

Open-source contributions: gittip (python), sinatra, shoes, hackety-hack, ratom, ldc (compiler), redfinger