

Kevin Atkinson

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Interests and Skills

- *Interested In:* Distributed file systems, Language design, Extensible syntax, Macro systems.
- *Languages:* C++, Go, Scala, C, Perl, Python, SQL, PHP, Shell Script, Tcl/Tk, Java, Haskell, ML, Lisp, Scheme, JavaScript, Assembly (x86)
- *Experience In:* Multi-threaded software design, Unix system programming, Distributed hash tables, FUSE, Compiler construction, Object oriented software design, Database development, Website design.

Education

- Ph.D. Computer Science, University of Utah, Salt Lake City, December 2011.
Dissertation: ABI Compatibility Through a Customizable Language.
Co-advisers: Matthew Flatt and Gary Lindstrom.
- M.S. Computer Science, University of Maryland, Baltimore County, December 2005.
Thesis: DistribNet: A Global Peer-to-Peer Internet File System.
- B.S. Computer Science, University of Maryland, College Park, May 2001.

Work Experience

- Postdoc, Rice and Halmstad University, Houston TX and Sweden, Aug. 2012 – Dec. 2014.
Worked with Walid Taha on various aspects of Acumem (acumen-language.org), a tool for simulating mathematical models of cyber-physical systems.
- Research Assistant, University of Utah, Salt Lake City, Aug. 2004 – June 2012.
Worked with the Flux Research Group on various projects, primary involving some part of the Emulab network testbed. Emulab (emulab.net) is written primary in Perl and uses the MySQL database. Also published some papers related to my work.
- Teaching Assistant, University of Maryland, Baltimore County, Aug. 2001 – May 2003.
Computer Science I; Problem Solving and Comp. Programming; Discrete Structures.
Taught discussion sections, graded, and held office hours to help students learn the course material.
- Teaching Assistant, University of Maryland, College Park, Sep. 2000 – May 2001.
Computer Science II; Computer Science I.
Held office hours to help students learn the course material.

Publications

Peer-Reviewed Conference Papers

- Kevin Atkinson, Gary Wong, Robert Ricci. “Operational Experiences with Disk Imaging in a Multi-Tenant Datacenter” *Proc. of the 11th USENIX Symposium on Networked Systems Design and Implementation (NSDI 2014)*, Seattle, WA, April 2014

- Kevin Atkinson, Matthew Flatt, and Gary Lindstrom. “ABI Compatibility Through a Customizable Language.” *Proc. of the Ninth International Conference on Generative Programming and Component Engineering (GPCE 2010)*, Eindhoven, The Netherlands, October 2010.
- Robert Ricci, Jonathon Duerig, Pramod Sanaga, Daniel Gebhardt, Mike Hibler, Kevin Atkinson, Junxing Zhang, Sneha Kasera, and Jay Lepreau. “The Flexlab Approach to Realistic Evaluation of Networked Systems.” *Proc. of the Fourth USENIX Symposium on Networked Systems Design and Implementation (NSDI 2007)*, Cambridge, MA, April 2007.

Peer-Reviewed Workshop Publications

- Kevin Atkinson, Adam Duracz, and Walid Taha. “Translating a Modeling and Simulation Language to Hybrid Automata.” *25th Nordic Workshop on Programming Theory*, Tallinn, Estonia, November 2013.
- Kevin Atkinson and Matthew Flatt. “Adapting Scheme-Like Macros to a C-Like Language.” *Workshop on Scheme and Functional Programming (Scheme’11)*, Portland, OR, October 2011.
- Michael P. Kasick, Priya Narasimhan, Kevin Atkinson, and Jay Lepreau. “Towards Fingerpointing in the Emulab Dynamic Distributed System.” *Third USENIX Workshop on Real, Large Distributed Systems (WORLDS 2006)*, Seattle, WA, November 2006.

Projects (All Open Source)

- ZL, 2004–present. *Dissertation work*. ZL is a C++-compatible language in which high-level constructs, such as classes, are defined using macros over a C-like core language. The ZL compiler (written in C++) transforms ZL into a custom C-like language, which is then compiled by GCC. Work also involved writing a new front-end for GCC to accept the custom language. <http://kevina.org/zl>
- DistribNet, 2002–2004. *Master thesis work*. DistribNet is a distributed hash table (DHT) implementation. It is a multi-threaded program written in C++. <http://distribnet.sourceforge.net/>
- GNU Aspell, 1998–present. *Primary developer and maintainer*. GNU Aspell is a spell checker (written in C++) for Unix-like platforms. Its main feature is that it does a superior job of suggesting possible replacements for a misspelled word than just about any other spell checker out there for the English language. <http://aspell.net>
- Spell Checker Oriented Word Lists (SCOWL) and related lists, 2000–present. *Primary developer and maintainer*. SCOWL is the careful combination of many other lists in order to create high quality word lists suitable for spell checker. Most open source spelling dictionaries for English are derived from SCOWL. <http://wordlist.aspell.net>
- Various plugins for AviSynth (a tool for video post-production), 2003–2004. *Original Developer*. Plugins include a C API (now integrated into AviSynth), Conditional Temporal Median Filter (which was latter picked up by another developer and became DeSpot), and Smart Decimate. <http://kevina.org/avisynth.html>
- MySQL++, 1998–1999. *Original Developer*. MySQL++ is a C++ wrapper for MySQL’s C API. It is now maintained by Warren Young. <http://tangentsoft.net/mysql++/>