

## Objective

To research and develop practical tools to help teach programming. I want to apply programming language theory to improve the state of educational programming environments.

## Education

Bachelor of Science (BS) in Electrical Engineering and Computer Science (EECS) in May 2001 at the University of California, Berkeley. Currently attending Worcester Polytechnic Institute as a CS graduate student (2006–), working with Professors Dan Dougherty, Kathi Fisler, and Shriram Krishnamurthi.

## Technical Skills

Extensive experience with programming languages since 1995. Experience includes: Python, Racket (Scheme), Java, Perl, C, SQL, as well as Unix administration and tools like Emacs, L<sup>A</sup>T<sub>E</sub>X, and Git.

## Work Experience and Projects

- 2010– Developing Whalesong (<http://hashcollision.org/whalesong>), a Racket-to-JavaScript compiler as part of the Moby and WeScheme projects.
- 2009– Wrote WeScheme (<http://wescheme.org>), an online programming environment that provides an editing and runtime environment on the web browser.
- 2009– Wrote the Moby Scheme Compiler (<http://www.cs.brown.edu/~sk/Publications/Talks/Moby-Bootstrap/>), a compiler from Beginner Student Language to smartphone platforms.
- 2008 Taught for the CitizenSchools program (<http://www.citizenschools.org/>) at University Park Campus School in Worcester. I used the Bootstrap (<http://www.bootstrapworld.org/>) curriculum, which teaches math skills by having students program algebraic functions to build a computer game.
- 2007–2008 Wrote the implementation of the *Alchemy* compiler, which takes a software specification written in the Alloy language and produces an implementation. (<http://www.cs.brown.edu/~sk/Publications/Papers/Published/kdfy-alchemy-trans-alloy-spec-impl/>)
- 2006– Worked with Guillaume Marceau at Brown University for Brown PLT summer session. I released *DivaScheme*, a alternative input interface to DrScheme. (<http://www.cs.brown.edu/research/plt/software/divascheme/>) I am currently the core maintainer of DivaScheme.
- 2002–2005 Co-organized the Bay Area Python Interest Group (<http://baypiggies.net>). I arranged speakers to discuss the Python programming language.
- 2001–2006 Software developer at the Carnegie Institution of Washington. I wrote database-driven web sites and data analysis programs, including the Pubsearch digital publication library project (<http://pubsearch.org>). I contributed to the GMOD sourceforge project. (<http://gmod.sourceforge.net>)
- 2001 CS3 Teaching Assistant. I led discussions in UC Berkeley’s introductory Scheme class (CS3), answered questions in office hours, wrote homework and laboratory solutions, and maintained the computer labs.
- 2000 Software Developer for [medbiz.com](http://www.medbiz.com) (<http://www.medbiz.com>). I helped develop [medbiz.com](http://www.medbiz.com)’s web site using the IBM Websphere Commerce Suite. The experience included: implementing business logic with C++ and IBM’s Net.Data, writing Secure Socket Layer (SSL) scripts, and developing SQL database programs.

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- 2000– Python Tutor. Tutoring for the [python-help@python.org](mailto:python-help@python.org) and [tutor@python.org](mailto:tutor@python.org) mailing lists. (<http://mail.python.org/mailman/listinfo/python-help/>, <http://mail.python.org/mailman/listinfo/tutor/>) I provided technical support and answered questions about Python installation and program development. I also helped programmers learn about the Python standard library, and wrote modules to demonstrate programming techniques and style. I was one of the core mailing list administrators of Python-tutor from 2001–2006.
- 1999–2000 Group Tutor for the SPC. I taught programming to students at UC Berkeley’s Self Paced Center (SPC), tutoring the following classes: Scheme (CS3), Fortran (CS9A), C (CS9C), Advanced Scheme (CS9D), UNIX (CS9E), C++ (CS9F), and Java (CS9G). I organized help sessions, administered mailing lists for classes, and answered individual student questions.
- 1998 Software Developer. I wrote an in-house prototype implementation of the Stable Marriage Algorithm for use in the EECS Internship Program. I also wrote an in-house Exam Checkout application for Eta Kappa Nu’s (HKN’s) Exam Files department.