

TIKHON JELVIS

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EDUCATION

University of California, Berkeley: BS EECS in progress

SKILLS

Languages Haskell, OCaml, Scheme (Racket), JavaScript, Python, Gosu, Java, C, Prolog

Topics Programming languages, program synthesis, functional programming, FRP

Tech Linux, Emacs, Git, SMT solvers, L^AT_EX

ACHIEVEMENTS

StackOverflow	I'm in the top 20 for the Haskell tag and in the 99 th percentile overall	2010–Now
Math contests	AMC12: 100.5 (97.5 th percentile), AIME: 3	2010
Hackathon	Got 2 nd place at the Berkeley CSUA Hackathon	2011

EXPERIENCE

Jane Street Capital Jun 2013–Aug 2013	Worked on a few different projects as well as learning about market making, arbitrage, ETFs and finance in general: <ul style="list-style-type: none">– A time-series graphing tool by compiling OCaml to JavaScript with <code>js_of_ocaml</code><ul style="list-style-type: none">* Wrote some reusable OCaml web libraries including a typesafe CSS system and a Functional Reactive Programming (FRP) framework– A replacement for the automount daemon in OCaml– A mock trading bot, working with two trading interns. The bot used OCaml, but I also used Haskell for exploratory code, data analysis and testing.
Berkeley ParLab Aug 2012–Jun 2013	Worked on program synthesis—generating programs to some specification <ul style="list-style-type: none">– Targeted GreenArrays, a very constrained, energy-efficient, stack-based architecture– Implemented two synthesizers, one in Racket and one in Haskell– Used the Microsoft Z3 SMT solver, Berkeley's Sketch solver and some machine learning algorithms
MixRank Dec 2012–Feb 2013	Worked part-time at MixRank, a YC startup in San Francisco <ul style="list-style-type: none">– Developed an aggregation framework for processing streaming web crawler data– Used Python and PostgreSQL
Ashima Arts May 2012–Aug 2012	Worked on <code>gloc</code> , a utility for creating and linking modules for GLSL written in OCaml <ul style="list-style-type: none">– Embedded <code>gloc</code> in a browser extension, using <code>js_of_ocaml</code>– Wrote a small open-source library for semantic version numbers: <code>ocaml-semver</code>

Copilot Labs Sep 2011–May 2012	<p>Worked part-time at Copilot, a San Francisco startup targeting restaurants</p> <p>Did a bit of everything:</p> <ul style="list-style-type: none"> – Backend work with Python and Django, including some simple machine learning – Frontend work with JavaScript, jQuery and Raphael.js – Ops, setting up automated testing and Jenkins CI
Guidewire May 2011–Jul 2011	<p>Guidewire is an enterprise software company serving P&C insurance companies</p> <p>Worked on the internal tools team developing a tool to monitor the company's servers</p> <ul style="list-style-type: none"> – Wrote the backend and monitoring daemon in Gosu, Guidewire's own JVM language – Built the frontend with JavaScript, jQuery and jQuery UI

PERSONAL PROJECTS

Semantic Diff jelv.is/cow	<p>Working on a semantic diff and merge tool in Haskell codenamed cow that</p> <ul style="list-style-type: none"> – Compares programs by diffing and analyzing the parse trees – Finds matching subtrees to robustly detect moved blocks of code <ul style="list-style-type: none"> ◦ can detect blocks of code that are both modified and moved <i>simultaneously</i> – Does scope analysis to find renamed variables – Can do three-way merges with more extensive, semantically aware conflict resolution
TPL jelv.is/tpl	<p>Designed and implemented (in Haskell) a dynamically typed scripting language, TPL</p> <ul style="list-style-type: none"> – Influenced by Self, JavaScript, Lua, Scheme and Haskell – Has some interesting features: <ul style="list-style-type: none"> ◦ “Laziness on demand”—fine control over what gets evaluated when ◦ A unified system for variable scope and object-oriented programming – Some silly features as well, like being able to change operator precedence at runtime
More	<p>I have more projects at my website <http://jelv.is/projects.html> and on my GitHub account <http://github.com/TikhonJelvis>. I also have a few packages up on Hackage: <code>modular-arithmetic</code>, <code>array-forth</code> and <code>mcmc-synthesis</code>.</p>