

## Elliott Cable

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I'm a testing- and documentation-obsessed software engineer, most motivated by programming-language design, tooling development, and accessibility.

I'm currently most interested in rapid software development using powerful correctness tools like OCaml and ReasonML; PL theory and JIT design; and embedded firmware design for RF devices. I'm most *\*experienced\** in JavaScript library development, Node.js, Ruby, POSIX shell, and ISO C.

In researching support software for a wide range of domains of concern, I'm additionally at least passably familiar with a vast array of other programming languages, tools, and platforms. (See footer.)

## PROJECT EXPERIENCE

Here's a sampling of my work, selected primarily to show breadth of experience:

### ### 2010–now: Pratchett, the programming language

My overarching work of the past ten years, Pratchett (née Paws) is the project that has driven much of my personal development as a programmer. From surveying prospective users' needs, staying on top of similar language work and PLT research, to organizing a (brief) community of interest and contributors and triaging design goals to try and keep a sense of constant progress, this has been my largest ongoing software project. (Yes, it's currently in CoffeeScript. Technical debt!)

- [http://ell.io/tt\\$Paws.js/tree/queueless+#README](http://ell.io/tt$Paws.js/tree/queueless+#README)
- [http://ell.io/tt\\$Paws.js/blob/d1a1f2/Source/datagraph.coffee#L27–L135](http://ell.io/tt$Paws.js/blob/d1a1f2/Source/datagraph.coffee#L27–L135)
- [http://ell.io/tt\\$Paws.js/blob/d1a1f2/Test/datagraph.tests.coffee#L246](http://ell.io/tt$Paws.js/blob/d1a1f2/Test/datagraph.tests.coffee#L246)
- [http://ell.io/tt\\$Paws.js/blob/546795/Source/reactor.coffee#L114–L196](http://ell.io/tt$Paws.js/blob/546795/Source/reactor.coffee#L114–L196)
- [http://ell.io/tt\\$Paws.js/blob/d1a1f2/Scripts/test.sh#L3–L35](http://ell.io/tt$Paws.js/blob/d1a1f2/Scripts/test.sh#L3–L35)
- [http://ell.io/tt\\$Paws.c/tree/f4fcb5/Source/Paws.o/Paws.c#L32–L94](http://ell.io/tt$Paws.c/tree/f4fcb5/Source/Paws.o/Paws.c#L32–L94)
- [http://ell.io/tt\\$Paws.c/blob/f4fcb5/Source/Paws.o/Ancillary/Threading/Thread/Thread.c#L97–L175](http://ell.io/tt$Paws.c/blob/f4fcb5/Source/Paws.o/Ancillary/Threading/Thread/Thread.c#L97–L175)

### ### 2017–now: Unnamed learning project, an R5RS–Scheme compiler in OCaml

At PwLconf 2017, I was introduced to A. Ghuloum's "Incremental Approach to Compiler Construction" paper. This spawned a still-ongoing project from which I am learning a substantial amount – about compiler architecture, as well as general OCaml skill, parsing automata, and Scheme itself.

- [http://ell.io/tt\\$ocameel/blob/5ac70f/bin/cli.ml#L6–L93](http://ell.io/tt$ocameel/blob/5ac70f/bin/cli.ml#L6–L93)
- [http://ell.io/tt\\$ocameel/blob/db2dda/lib/Lexer.sedlex.body.ml#L40–L97](http://ell.io/tt$ocameel/blob/db2dda/lib/Lexer.sedlex.body.ml#L40–L97)

### ### Various patches, or contributions to others' open-source projects

I'm a repeat open-source developer and patcher. Although so many of my changes stay local and never see the light of day (a bad habit!), occasionally, I clean up and complete my explorations, and remember to submit a pull-request.

- 2018, Python/OCaml, to OCaml's analysis engine, Merlin:  
[http://ell.io/tt\\$merlin/blob/9b80dd/vim/merlin/autoload/merlin.py#L677–L734](http://ell.io/tt$merlin/blob/9b80dd/vim/merlin/autoload/merlin.py#L677–L734)
- 2017, ISO C, adding syscalls to the xv6 operating system, as an exercise:  
[http://ell.io/tt\\$xv6/blob/efd94e/README#L10–L57](http://ell.io/tt$xv6/blob/efd94e/README#L10–L57),  
[http://ell.io/tt\\$xv6/compare/08429c...379fc6](http://ell.io/tt$xv6/compare/08429c...379fc6)

- 2013, ISO C, adding a history-reorganizing feature to git mainline:  
[http://ell.io/tt\\$git/compare/b5c267...author-order+](http://ell.io/tt$git/compare/b5c267...author-order+)

### ### 2017-now: Giraphe, a configurable JavaScript graph-walking library

Extracted from my work on Paws.js by necessity, this is an API designed to generate individual, optimized graph-walking iterators for various Pratchett-related tasks. (It currently only *implements* a generic, unoptimized walker.)

- [http://ell.io/tt\\$giraphe#README](http://ell.io/tt$giraphe#README)
- [http://ell.io/tt\\$giraphe/blob/fe85e6/giraphe.es6.js#L122-L257](http://ell.io/tt$giraphe/blob/fe85e6/giraphe.es6.js#L122-L257)

### ### 2016: `pin-cushion`, an API-client for <http://Pinboard.in>

A small, one-off, but complete and modern, command-line client for my bookmarking service of choice. Included simply because it's some of the only recent and pure JavaScript I've written, with no legacy cruft.

- [http://ell.io/tt\\$pin-cushion#README](http://ell.io/tt$pin-cushion#README)
- [http://ell.io/tt\\$pin-cushion/blob/36be70/pin-cushion#L78-L121](http://ell.io/tt$pin-cushion/blob/36be70/pin-cushion#L78-L121)

### ### 2008: ArchLinux image-builder for Amazon EC2

ArchLinux, my preferred distro, was unavailable on Amazon EC2 for years. I built a fiendishly-complex, modular shell-script architecture for bundling custom builds of Arch and publishing them to your EC2 hosts. This involved poring through both Amazon's AWS documentation, as well as that of Arch's own build-system and packaging. This is the largest pure-POSIX-shell program I've written.

- [http://ell.io/tt\\$ArchLinux-AMIs/blob/a34646/bundle.sh](http://ell.io/tt$ArchLinux-AMIs/blob/a34646/bundle.sh)

### ### 2006-2009: Assorted Ruby tools

I was heavily into metaprogramming Ruby for many years - these are some of the libraries and tools I was most proud of.

- [http://ell.io/tt\\$it/blob/b52441/lib/it/environmented\\_proc.rb#L63-L155](http://ell.io/tt$it/blob/b52441/lib/it/environmented_proc.rb#L63-L155)
- [http://ell.io/tt\\$lobby/blob/8dc3f6/lib/lobby.rb](http://ell.io/tt$lobby/blob/8dc3f6/lib/lobby.rb)
- [http://ell.io/tt\\$stringray/blob/117038/lib/stringray.rb#L3-L162](http://ell.io/tt$stringray/blob/117038/lib/stringray.rb#L3-L162)
- [http://ell.io/tt\\$nfoiled/blob/d8e593/lib/nfoiled/window.rb#L3-L217](http://ell.io/tt$nfoiled/blob/d8e593/lib/nfoiled/window.rb#L3-L217)

## ADDITIONAL INFORMATION

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I'm an avid maker/hacker, a gov't-licensed General-class radio operator (KL4JC, monitoring!), and an activist for the safety and inclusion of Black, trans, and other underrepresented folks in tech. I'm also a lifelong Eagle Scout.

Finally, a keyword-oriented list of additional related skills omitted from the above (at least, those with which I have at least a passing familiarity), follows:

Techniques: BDD & TDD

Languages & platforms: CoffeeScript, TypeScript, Flow; Rails, PHP;

Objective-C, Cocoa; Io, Lua, Potion; Racket, Guile, other R5RSes; Tulip, Eff; VimScript

Other: macOS, BSD, Linux, and the POSIX/UNIX APIs; Redis & MongoDB