

**Elliott Cable**

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“Move slowly and maintain things.”

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I am a testing-, operations-, and documentation-obsessed software engineer. I am primarily looking to join projects involving:

- programming-language design and implementation,
- other software-tooling development,
- technical-debt paydown and maintainability refactors, or
- accessibility tooling / positive effects on diversity-in-tech

My preferred process involves careful software development using powerful correctness tools like OCaml and ReasonML; or PLT and JIT/compiler design. I'm most experienced in: interpreter implementation; open-source library maintenance; modern JavaScript tooling, versioning, and deployment; JS library development; server-side development in Node.js or Ruby; POSIX shell and ISO C.

## PROJECT EXPERIENCE

Here's a sample of my work, selected primarily for breadth. Where legally possible, I've included links to source-code that I find to be particularly exemplary.

### ### 2018-2019: KidScript, an educational programming-language for kids (as Senior Software Engineer at Codeverse)

Codeverse brought me onboard to draw on my open-source experience, improving on the stability of (and establishing engineering process for) their KidScript programming-language, as well as an iOS IDE. Responsibilities included:

- Establish strict Semantic Versioning procedure for the releases of, and dependencies between, internal packages and external products
- Rewrite organization's internal tooling for JavaScript and iOS compilation, deployment, etc. effectively from scratch, to enforce good practices
- Contribute features and handle fixes to the parsing, error-handling, and interpreter components of KidScript
- Manage contributions to the language's standard-library of components and objects
- Review other engineers' contributions to all of the above; providing guidance on maintainability and technical debt
- Rewrite critical portions of the IDE's game/graphics-engine in TypeScript and ML to improve stability

### ### 2010-now: Pratchett, a programming language

My overarching work of the past ten years, Pratchett (née Paws) is the project that's driven much of my personal development as a programmer. From surveying prospective users' needs, staying on top of similar language projects and theoretical 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.

- [ell.io/tt\\$Paws.js/tree/queueless+](https://ell.io/tt$Paws.js/tree/queueless+)
- [ell.io/tt\\$Paws.js/blob/d1a1f2/Source/datagraph.coffee#L27-L135](https://ell.io/tt$Paws.js/blob/d1a1f2/Source/datagraph.coffee#L27-L135)
- [ell.io/tt\\$Paws.js/blob/d1a1f2/Test/datagraph.tests.coffee#L246](https://ell.io/tt$Paws.js/blob/d1a1f2/Test/datagraph.tests.coffee#L246)
- [ell.io/tt\\$Paws.js/blob/546795/Source/reactor.coffee#L114-L196](https://ell.io/tt$Paws.js/blob/546795/Source/reactor.coffee#L114-L196)
- [ell.io/tt\\$Paws.js/blob/d1a1f2/Scripts/test.sh#L3-L35](https://ell.io/tt$Paws.js/blob/d1a1f2/Scripts/test.sh#L3-L35)

### ### 2018–now: Excmd.js, a performant and strict vi-mode parser for Tridactyl

I'm a huge fan of Firefox and Vim; and Tridactyl, a vi-mode for daily web-browsing. I offered to take over the rewrite of their Exmode (command-line) parser.

- [ell.io/tt\\$excmd.js](https://ell.io/tt$excmd.js)

Beyond just improving the parser, my *primary* goal here was to apply traditional OCaml parsing tooling to a front-end project. I yearn to 'shave the rough edges' off the user-experience of OCaml for use in the JavaScript community; and this project gave me a lot of opportunity to contribute back. I spent much time working in the BuckleScript ecosystem and improving the overall experience of writing ML-for-the-web.

- [ell.io/tt\\$bs-sedlex](https://ell.io/tt$bs-sedlex)
- [github.com/c-cube/gen/pull/17](https://github.com/c-cube/gen/pull/17)
- [github.com/ocaml/merlin/pull/771](https://github.com/ocaml/merlin/pull/771)
- [github.com/ocaml-ppx/ppx\\_deriving/pull/204](https://github.com/ocaml-ppx/ppx_deriving/pull/204)
- [github.com/ocaml-labs/higher/pull/12](https://github.com/ocaml-labs/higher/pull/12)

### ### 2017: 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.)

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

As of December 2021, I'm busy re-writing this in TypeScript (sadly, not OCaml) and optimizing for performance.

- [ell.io/tt\\$giraphe/blob/33a5259f/src/edgeless-walker.ts](https://ell.io/tt$giraphe/blob/33a5259f/src/edgeless-walker.ts)

### ### Various patches and 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.

- 2020, OCaml/JS: BuckleScript, Bloomberg's OCaml-to-JavaScript compiler

My most recent sizable contribution, this patch was an on-and-off project throughout 2020. I would like to call attention to my documentation, clear explanatory git-log, and incremental changes, moreso than the actual code-changes I contributed.

[github.com/rescript-lang/rescript-compiler/pull/4116](https://github.com/rescript-lang/rescript-compiler/pull/4116)

- 2018, Python/OCaml: Merlin, OCaml's analysis engine.  
[ell.io/tt\\$merlin/blob/9b80dd/vim/merlin/autoload/merlin.py#L677-L734](https://ell.io/tt$merlin/blob/9b80dd/vim/merlin/autoload/merlin.py#L677-L734)

- 2017, ISO C: the XV6 operating-system.  
[ell.io/tt\\$XV6/blob/efd94e/README#L10-L57](https://ell.io/tt$XV6/blob/efd94e/README#L10-L57),  
[ell.io/tt\\$XV6/compare/08429c...379fc6](https://ell.io/tt$XV6/compare/08429c...379fc6)
- 2013, ISO C: Git. adding a history-reorganizing feature.  
[ell.io/tt\\$git/compare/b5c267...author-order+](https://ell.io/tt$git/compare/b5c267...author-order+)

### ### 2016: `pin-cushion`, an API-client for [Pinboard.in](https://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 *\*pure\** ES6+ JavaScript I've written this decade, with no legacy cruft.

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

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

Arch Linux was unavailable on Amazon EC2 for years. I built an overengineered, modular shell-script architecture for bundling custom builds of Arch and publishing them to your EC2 hosts. (This is the largest pure-POSIX-shell program I've written, and although it showcases well some of my UNIX/sh knowledge, I wouldn't undertake a project in this way nowadays.)

- [ell.io/tt\\$ArchLinux-AMIs/blob/a34646/bundle.sh](https://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 at the time.

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

## ADDITIONAL INFORMATION

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I'm an avid maker/hacker, I hold a 'General'-class gov't license for radio operation ([KL4JC](https://kl4jc.com), monitoring!), and I'm 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 *\*some\** familiarity), follows:

Practices: BDD & TDD, Agile; granular Git or git-flow; Agile, git-flow;  
Semantic Versioning  
Languages & platforms: CoffeeScript, TypeScript, BuckleScript, Flow; React, Rails, Python; Objective-C, Cocoa; Io, Lua, Potion; Racket, Guile, other R5RS; Tulip, Eff, MetaOCaml; VimScript; C++, Java  
Other: macOS, BSD, Linux, and the POSIX/UNIX APIs; Redis & MongoDB; firmware / RTOS development; Docker, Vagrant; PostgreSQL