

## Skills

- **Languages** Clojure, Elixir, Rust, C
- **Tools** Git, Linux, Emacs
- **Have worked with** OCaml, Racket, Python

## Experience

### Software Engineer at Nilenso Software

*Jan 2018 - Present*

- Worked on the Clojure backend for a commerce platform bridging payments between WeChat and retailers in the US.
- Worked on a Elixir/OTP distributed system used to run live quiz shows.

### Independent software developer

*Jan 2016 - Dec 2017*

- Self-study of compilers, operating systems and database systems
- Worked on a number of educational projects including compilers and renderers.

### Software Developer at Helpshift

*Feb 2014 - Jan 2016*

Helpshift is a customer support portal for mobile apps.

- Wrote backend services for customer-facing features.
- Wrote a system for triaging incoming customer support tickets based on user-defined filters.

## Projects

### rusl

*Rust*

rusl is a Lisp compiler targeting x86-64.

Github: <https://github.com/samrat/rusl>

- Syntactically similar to Scheme, and supports many of its high-level features such as closures.
- Features a linear-scan register allocator.

### Parts-of-speech tagger

*Clojure*

I implemented a parts-of-speech tagger in Clojure.

Github: <https://github.com/samrat/pos-tagger>

Write-up: <https://samrat.me/posts/2013-12-29-parts-of-speech-tagging-hmm/>

### rayml

*OCaml*

A raytracer that supports diffuse and reflective materials.

Github: <https://github.com/samrat/rayml>

### sambe

*OCaml*

Compiler for an LLVM-like intermediate language called QBE.

Github: <https://github.com/samrat/sambe>

### Futhark (Contributor)

*Haskell, Python, C*

Futhark is a research programming language that compiles to OpenCL.

Github: <https://github.com/diku-dk/futhark/commits?author=samrat>

- I implemented some language features such as hexadecimal float literals.
- Involved changes to the compiler, as well as to the Python and C runtimes.

### Blog (<https://samrat.me>)

*Technical writing*

- Contains some posts explaining technical topics
- Notable posts include an article on disk-based hashtables and an article explaining external merge-sort.

## Education

### University of London International Programmes

*2018 - Present*

- Currently pursuing a BSc. Mathematics and Economics