




Daniel Cartwright

Work Experience




- 2017–Present **Programmer**, [Layer 3 Communications](#).
- Working on a network [SIEM](#) using Haskell.
 - I performed the initial setup and currently maintain a [Hydra server](#) for use as GitHub [CI](#) for Layer 3. The server is capable of distributing pre-built binaries to developers.

Open Source Programming




[diet](#).

- First complete design and implementation of Discrete Interval Encoding Trees, a class of data structures for extremely memory efficient storage/lookup of enumerable data.
-  | [Haskell](#) |  3577 |  2815




[semirings](#).

- Library providing 'Semiring' and 'Ring' typeclasses that are useful in a number of applications/studies such as matrix algebra, regular expressions, kleene algebras, graph theory, tropical algebra, dataflow analysis, power series, and linear recurrence relations.
-  | [Haskell](#) |  469 |  157

[silvi](#).

- A library for generating fake data by allowing users to define extensible record types representing their data types, with a minimal API and emphasis on ease of use for the user.
-  | [Haskell](#) |  5052 |  4227

[freq](#).

- Cryptanalytic frequency analysis tool, using a linguistic n-gram approach and training data. Used at Layer 3 Communications to score domain names by validity.
-  | [Haskell](#) |  358501 |  17161

Activities

- 2010–2014 **Club**, [University Interscholastic League - STEM](#), Member.
Academic competitions organised by the University of Texas at Austin.
Participated in [Mathematics](#), [Computer Science](#),
[Calculator Applications](#), [Number Sense](#), [Science](#), and Placed State in 2011, Regionals in 2012, 2013, and 2014.

Skills

- Programming Haskell, Nix,
Software Linux, NixOS, git, \LaTeX ,