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

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