

# Daniel Krol

portfolio (github) • dan@danielkrol.com

## Senior Software Developer

**Values:** Clean code, Clean data, Clear team communication.

**Skill highlights:** Python, Go, Node.js, TypeScript, Blockchain, OpenStreetMap, Linux, Functional Programming

## Work History

### Cointr.ee

**Software Development Contractor** - Mar 2024-Aug 2024

Cointr.ee is a platform for creators to accept cryptocurrency donations, and for fans to post messages to their favorite creators.

- **Add ZCash support:** Allowing transparent ZCash donations to be posted to the site.
- **Upgrade Dependencies:** Get React Native and Firebase functions up to date and address reverse-incompatible changes.
- **Bug Fixes:** Fix UI bugs, duplicate emails, and BCH donations not being detected.
- **Usage Statistics:** Create a script that can be run to give site owners a view of how the site is used.

### Semicolons

**Software Development Contractor** - Feb 2024

Semicolons is a platform for funding open source projects.

- **Research Project** - Worked with data scientist to study dependency relationships between software packages. Used sources such as Software Bill of Materials.

### LBRY - Web3 media platform

**Software Engineer** - Oct 2021-Nov 2022

Contributed to and lead various projects related to blockchain and distributed/peer-to-peer systems, including:

- **Wallet Sync Server:** Protocol design and Go server implementation for LBRY [non-custodial cryptocurrency wallet sync](#). Syncing encrypted wallet between client and server with a single password, securely, without losing data.
- **ActivityPub Integration:** Researched and worked on ActivityPub integration for LBRY, to enable federated social features such as comments, likes and follows.
- **JavaScript Wallet:** Created proof-of-concept implementation of LBRY wallet in JavaScript for signing transactions in the browser.

### ElectionBettingOdds.com

**Software Development Contractor** - Oct 2020-Oct 2022

ElectionBettingOdds.com is an aggregator of betting odds on the outcomes of key events, usually elections, from various betting websites. I made various improvements to the site, including:

- **Electability Feature:** Implemented the "Electability" feature, factoring in odds for primary and general election victory.
- **Data Sources:** Greatly improved the flexibility in adding and combining betting websites as data sources.
- **Error Handling:** Improved error handling and tolerance.
- **Data History Format:** Made data history format more robust and useful.

### Sandstorm Community Project

**Open Source Web Application Developer** - Oct 2021-Mar 2023

Developed applications for Sandstorm, an open source platform for self-hosted web applications, both as a volunteer and as a contractor.

- **New Map Application:** Created a new [fully self-hosted OpenStreetMap application](#).
- **Kiwix Package:** Created a [package for Kiwix](#), an existing application for hosting mirrors of open data websites such as Wikipedia or Project Gutenberg.
- **Etherpad Upgrade:** Upgraded the existing Sandstorm package for [Etherpad](#).

### Etherpad

**Open Source Developer** - Apr 2020-Jul 2020

Contributed to Etherpad, a prominent open-source web-based word processor, implemented in JavaScript. Projects included:

- **WebRTC Plugin:** Fixed error messages and ensured cross-browser compatibility, enhancing user A/V chat experience within collaborative documents.
- **Color Picker:** Corrected user's avatar color in shared documents, implemented validation test coverage.
- **Test Suite:** Identified and resolved inaccuracies in cookie reset mechanisms during tests, eliminating potential false positives and reinforcing the reliability of test results.
- **Developer Documentation:** [Refined WebRTC plugin documentation](#), streamlining the onboarding process for future contributors.

### Mix.com - Curation-based content recommendation

**Platform Engineer** - Nov 2016-Sept 2019

I was part of the backend/API team at Mix.com, an application that recommends content based on user curation. The components I worked on were written in Go and Node.js.

The major part of my job was coordinating with the Recommendation Service team on taxonomy of topics, architectural decisions, and turning user events into feedback for future recommendations.

## Basis (an Intel company) - Activity and sleep tracking

**Backend Engineer** - Apr 2015-Nov 2016

I was part of a small team that managed the API (Python/Flask) for an athletic watch at Basis, part of Intel's now defunct wearables division.

The most interesting project I was involved in was smoothly transitioning each user to an updated sleep data stream. This was complicated by users having firmware versions, time zones, and other factors. In the end we mostly avoided interruptions in both individual sleep events and daily aggregates.

Some of my responsibilities included:

- Representing user activities to phone apps.
- Deploying servers via SaltStack.
- Keeping system metrics.

## Brilliant (formerly Alltution) - Online STEM challenges

**Senior Engineer** - Jul 2011-Nov 2014

Python/Django engineer at **Brilliant.org**, from founding to 1 million signups:

- Helped design backend and database schema for the initial STEM problem solving interface.
- Created UI framework on top of Django that facilitated in-page component updates via ajax, but degraded seamlessly to no-JavaScript for old browsers.
- Integrated analytics and A/B testing, connecting user events to various 3rd party analytics services.

Backend Python/Django developer for **Alltution**, which offered streamlined student loan services.

- Improved loan consolidation rate prediction system.
- Conducted Mechanical Turk based research project.
- Created [Python Client Library](#) based on 3rd party API spec.

## Other Contracting

**Datamaglia** - Dec 2014-Feb 2015 - Python/Django development

**Voyager Tech** - May 2011-Jul 2011 - Python/Django development

**Shelfworthy** - Apr 2010-Oct 2010 - Python/Django development

**Reuseit** - Nov 2009-Dec 2009, Feb 2011-Jul 2011

PHP/SQL development. Feature/bug fixes for site, store and shipping systems.

**Brilliant** - Oct 2020-Jul 2021

Planning and writing interactive online computer science course material.

## Open Source Projects

See: [Open Source Portfolio](#)

## Education

**2001-2005** **B.S., Computer Engineering;** Illinois Institute Of Technology (Chicago, IL)

**2014** **Functional Programming Principles in Scala;** Coursera (Online)

See: [Course Record](#)

**2014** **Erlang Camp** (Austin, TX)

*A weekend-long crash course in Erlang and OTP*

## Skills

### Languages

Python	Go	Node.js
TypeScript	Haskell	

### Tools

Django	Flask	PostgreSQL
Angular/React	Ansible	SaltStack
Docker	AWS/Firebase/Netlify	Kafka

### Operating Systems

Ubuntu/Debian	QubesOS	OSX
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### Other

Test Driven Development	Functional Programming	WebRTC
Blockchain	WebSockets	OpenStreetMap/Leaflet

## Interests and Activities

Juggling	Biking	Editing OpenStreetMap
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