

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

LBRY - Blockchain-based 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 Alltuition) - 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 **Alltuition**, 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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