

TIMELINE

PACKLANE 2016–

Lead Engineer

I built our WebGL-powered box design interface, an image processing system with full color management support, our prepress automation infrastructure and web backend written in Elixir, and all the other bits and pieces of technology a web startup needs.

SCRIBD 2015–2016

Software Engineer

I worked on A/B tests to improve growth, built a new version of the book page, improved the doc reader on mobile web, implemented the front-end for sheet music, and closed a ton of JIRA tickets.

SCRIBD 2013–2014

Intern - Software Engineering

I wrote a new EPUB renderer that supports large books on low-powered devices, ported Scribd to Windows Phone and the Kindle web browser, and closed a ton of JIRA tickets.

DARTMOUTH COLLEGE 2011–2014

Computer Science

FEATURED PROJECTS

Grepstream

grepstream.com

Grepstream is a movie search engine built with Meteor, Python, and Elasticsearch. It's designed to be fast and flexible: for instance, you can use it to find all the comedies that have an RT rating of 80% or above that are legally available to stream for free (e.g. on Hulu or Netflix).

Strindberg

strindberg.in

An online document editor built with Meteor and pandoc. Write in any markup language you like; render to any output format you need. Documents are preserved as you type in a custom version control system built inside of MongoDB. Winner of Hack-Princeton 2012.

Noisehack

noisehack.com

Noisehack is my blog about audio and music hacking. Topics include emulating analog synths in the browser, convolving microphone input with Shepard tones and visualizing the spectrogram, custom DSP effects with the Web Audio API, and 8-bit Arduino music.

Mandelbro

mandelbro.com

A music visualizer that runs in your web browser, combining Web Audio (for audio analysis), WebGL (several different shader-based visualizations are included), SoundCloud, and the WebMIDI API (to control the visualization with a hardware controller).

SKILLS

ADVANCED

Python, JavaScript, CSS

INTERMEDIATE

Elixir, Ruby, C, GLSL, Haskell, SQL

BASIC

Go, Clojure, SuperCollider, Perl, Scheme, Java

OTHER ENDEAVOURS

spoken languages – English & Swedish.

hackathons – 1st place, HackPrinceton 2012; PennApps 2013; HackMIT 2013; DAX v.2; Quora ML CodeSprint 2013; Greylock Hackfest 2; TechCrunch Disrupt SF 2013; HAMR in the Woods.

open source – In addition to over 40 of my own projects, I've contributed to Meteor, autoprefixer-rails, python-readability, beets, tuna.js, and whatmp3.

project euler – I've solved around 100 Project Euler problems, mostly in Haskell.

GNEON

gneon.co

GNEON (a clothing company) asked me to build their new site. It's a bit flashier than your typical shopping site. When you click on the logo, their SoundCloud music starts playing, the logo, links, and buttons start changing colors, and everything lights up in time with the beat.

noise.js

zach.se/noisejs

noise.js is a JavaScript library that extends the Web Audio API by providing noise generators. It currently includes generators for white noise, pink noise, and brown noise, which can either be used as audio sources or for modulating other Web Audio nodes.

wavebender

zach.se/wavebender

wavebender is a Python library for audio synthesis, based around the concept of audio as infinite streams. To generate audio, you compose basic streams like sine and square wave generators, and then wavebender converts the stream representation into WAV.

Course Picker

courses.hackdartmouth.org

A web app which lets you search for classes based on student reviews, median grades, and other criteria. Most Dartmouth students use it when shopping for classes. I built the front-end and a scraper to extract information from the course catalog.