

# Curtis L. Mitchell

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## Career Summary

I am a machine learning engineer and software developer that is excited about using machine learning and analytics to make data-driven insights available to users at any technical level. I have worked at several startups and consultancies as both an analyst and engineer with teams across the full spectrum of an organization, from product managers and designers to dev ops teams and data scientists. I am a diligent and patient team member that enjoys opportunities to both learn new skills and share my knowledge with colleagues.

## Skills

### Programming and Mark-Up Languages:

Python

JavaScript, HTML, CSS

TypeScript

SQL

### Machine Learning Libraries:

Keras and Tensorflow

Scikit-Learn and Pandas

### Python Libraries and Frameworks:

Numpy and Scipy

Matplotlib and Seaborn

NLTK and Spacy

Django

### JavaScript Libraries and Frameworks:

React, Redux, Angular, and jQuery

D3.js and Highcharts

### Platforms:

OSX and Linux

Node.js

Docker

NGINX

### Databases:

PostgreSQL

SQLite

## Professional Experience

### Springboard Machine Learning Engineering Career Track (2020 - Present) (Fellow)

Springboard's ML provides 400+ hours of hands-on course material, 1:1 industry expert mentorship, and completion of in-depth capstone projects. Through this program I have mastered skills in the overall machine learning stack including data wrangling at scale, deep learning, and building and deploying large-scale AI systems.

My capstone project was a Japanese-English translation application, using a dataset of Japanese-English sentence pairs to train a neural network and using the resulting model to create a full-stack web application. (See projects section below for more details).

### Mode Analytics (2017 - 2020)

An online platform for helping analysts and data scientists perform analysis, build reports, and share their work more effectively.

Some of my achievements at Mode included:

- Served as the primary engineer on a full-stack feature used daily by customers to capture screenshots of Mode reports and took the feature from a <20% success rate to ~99%; this feature was a Node.js-based application running inside of a Docker container
- Added observability tools to services such as the screenshot capture application described above that provided analytics capabilities to better understand customer usage patterns and software execution processes
- Successfully oversaw the upgrading of the Plotly library in Mode's notebook system from version 3.x to 4.x, requiring knowledge of Python, Javascript, and Docker; this resolved a top customer request for the Python notebook environment
- Successfully developed and lead a JavaScript workshop for members of the customer support engineering team to help them more effectively diagnose and solve customer issues and help users with writing custom JavaScript features in Mode reports
- Greatly expanded unit testing for Mode's TypeScript codebase and migrated 25% of our state-management system from Redux to RxJS in conjunction with other engineers

- Regularly deployed and managed web application releases and acted as a first responder for possible production bugs and outages

#### Ayasdi (2015 - 2017)

An enterprise platform for automated business value discovery and advanced AI-based insights across multiple industries. My work at Ayasdi included:

- Migrated Ayasdi's primary statistical UI from an older Backbone.js framework to one utilizing React and Redux, which greatly improved the performance of tables and visualizations by adding features such as infinite scrolling
- Wrote frontend components of a major feature allowing users to select nodes in one visualization and having those selections represented instantly in other graphs and statistical tables of the data represented in the selected nodes
- Regularly presented and demonstrated new features at company all-hands meetings
- Wrote multiple Python-based Selenium scripts to test UI features and workflows

#### Bluenose Analytics (2013 - 2015)

SaaS platform focused on helping companies grow and retain customers. My responsibilities included:

- Built new and redesigned UI components including a SQL query builder and custom date selector for retrieving data
- Interfaced directly with product managers, designers, and other engineers to spec out and test new features

#### DNV GL (2008-2010 and 2012-2013)

An international consulting firm offering services in numerous industries. I was part of their alternative energy and energy efficiency evaluation team. My responsibilities included:

- Performed statistical analysis on utility customers' energy usage
- Wrote data mining SAS scripts to find relevant subpopulations of utility customers
- Acted as a field engineer to install data loggers for collecting data on energy usage and solar panel efficiency
- Built Excel dashboards modeling energy usage across multiple climate zones throughout the United States

#### Bridge Asia Japan (2011) (Volunteer)

I proofread and edited English-language annual reports and other material for the Tokyo office of a Japanese NGO.

## Projects

#### Curt-Mitch.com

Personal website hosting articles and other projects. The site is hosted on DigitalOcean and features a React-based frontend, a Django-based backend within a Docker container, and NGINX working as a reverse-proxy server.

A more detailed description can be found at <https://curt-mitch.com/project/website-walkthrough>.

#### Japanese-English Translation Model

Capstone project for the Springboard machine learning engineering program. It consists of a machine translation project using a deep learning model that was trained on 2.8 million Japanese-English sentence pairs which I preprocessed. The neural network architecture used was an encoder-decoder with Gated-Recurrent Units (GRUs) and Bahdanau attention. I trained the model on a Paperspace GPU and deployed it as a full-stack web application on my personal site using static weights and vectorizers to create predictions.

The project is hosted at <https://curt-mitch.com/project/jp-en-translator>.

A detailed walkthrough of the project is here: <https://curt-mitch.com/post/jp-en-translator-walkthrough>.

## Education

Springboard (ML Engineering Track) - 6-month course in artificial intelligence and machine learning technologies and methods

Hack Reactor - 3-month JavaScript-focused coding bootcamp for web development

Bachelors in Physics (BS) and Mathematics (BA) with minors in Japanese and German from the University of North Texas, graduated as an Honors Scholar through the Honor College