

Liz Nelson

Software & Data Engineering | Public Policy | Civic Tech

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SUMMARY

I am a graduating Masters candidate in computer science and public policy looking for software and data engineering roles. I thrive when I get to learn new technologies, diagram out applications and databases, or untangle legacy code. I'm as comfortable speaking to non-technical clients and leadership as I am talking through the guts of an application with other developers.

TECHNICAL PROFILE

Languages: Python, R, JavaScript, SQL, Unix/Bash, Scala, Java, PHP

Back-End Frameworks: Flask (Python), Bottle (Python), Django (Python), NodeJS (JavaScript)

Front-End: JavaScript, PHP, Bootstrap, CSS, HTML

Data Visualization: R Shiny, Plot.ly

Databases & Big Data: PostgreSQL, SQLite, Hadoop, Hive, Kafka, Apache Thrift (Java), HBase, Spark, Zookeeper, AWS EC2

Developer Tools: Docker, AWS CodeDeploy, AWS S3, Netlify, Heroku, Hugo, Git

Operating Systems: Linux (Ubuntu, Mint, RedHat), MacOS, Windows

EXPERIENCE

BallotReady, Chicago, IL/Remote - Data Fellow

JULY 2020 - PRESENT

- **Cross-functional data fellow** working to implement data engineering solutions to enable data collection on polling place, ballot measure, candidate, and candidate position data for all 50 states for the 2020 election, informing over 5 million voters.
 - Responsible for building an uploading feature to allow UI-based database uploads of new elected position data
 - Co-lead for user diversity analysis project utilizing clickstream and census data to determine probable demographics of user base
 - Conducted accessibility analysis of primary tool capabilities using HTML- and accessibility-analysis tools
 - Data liaison for extracting meaningful data insights for Twitter and LinkedIn marketing campaigns through SQL queries and analysis
 - Ad-hoc data team technical support to measure distance between polling places and representative addresses, gather last-minute polling place changes through a web scraper, identify data errors using regular expressions, and develop custom GoogleSheets functions

Deloitte Consulting: Federal Strategy & Analytics, Arlington, VA - Senior Consultant

AUGUST 2015 - AUGUST 2019

- **Lead developer** for two client-facing web-based optimization tools built in R Shiny with dynamic user-input parameters feeding into a resource planning optimization
 - Mentored and supervised 2-3 developers

- Co-facilitated two-day feature design and user-feedback session with 10+ attendees
- Created and managed application development timelines, including planning release schedule, and organizing modified Agile-style sprints
- Translated business goals and rules into optimization objectives and constraints in production model
- Performed data cleaning, statistical analysis, data visualization, and user-interface design tasks
- Additional roles and responsibilities, including:
 - Team lead for risk analysis modeling team responsible for conducting annual quantitative assessment of client's security procedures and equipment to support resource allocation and procurement decisions
 - Wrote Python web-scraper as part of a text processing pipeline
 - Conducted network analysis on government agency partners, customers and competitors.
 - Built custom ecosystem map visualization to inform customer segmentation
 - Delivered and developed trainings for groups of 15-30 people on software engineering and machine learning topics

EDUCATION

Harris School of Public Policy, University of Chicago, Chicago, IL - *MS Computational Analysis and Public Policy (MS-CAPP)*

SEPTEMBER 2019 - EXPECTED JUNE 2021

Relevant Projects:

- **Big Data Application Architecture: How Safe is it There? Targeted COVID Information by Destination with Real-Time Updates** (NodeJS, JavaScript, Hadoop, Hive, Shell Scripting, Java, Thrift Serialization, Spark, Scala, Kafka, Bootstrap)
 - Shell scripting to gather and process millions of rows of cell phone location data
 - Java scripting to Thrift serialize location data for ingestion into Hbase
 - HiveQL scripting to create view tables stored in Hbase
 - JavaScript for NodeJS scripting to geocode user-input addresses, return a Census tract based on lat/long, and look up the associated Hbase information based on Census tract
 - JavaScript to send real-time updates to case numbers via Kafka
 - Spark job written in Scala to process Kafka messages into updates to Hbase tables
 - Bootstrap for generic UI formatting
- **Databases for Public Policy: Guided API Endpoint Design** (Python, Bottle, PostgreSQL)
 - Python and Bottle to interact with a remote PostgreSQL database endpoint
- **CS 2 Project: Web Application to Track Local Legislation** (Python, Django, SQLite, SQL, Bootstrap)
 - Custom Web Scraping followed by SQLite ingestion into database
 - UI with Bootstrap and Django templating
- **Machine Learning for Public Policy: Predicting Changes in Movement During Stay-At-Home Orders** (Python, scikit-learn)

The George Washington University, Washington, DC - *BS Economics, BA International Affairs*

AUGUST 2011 - MAY 2015

Academic Honors: Graduated *summa cum laude*, Phi Beta Kappa, University Honors Program graduate, Presidential Scholarship (4 year merit scholarship)