Dylan Phelan

Lead Web Developer @ MITRE

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Hi, I'm Dylan! I'm a web developer with 6+ years experience working on healthcare, social justice, and benefits delivery projects. I've created UI's using React and Vue, CLIs and APIs using Node.js and Python, ML models using Python, and architecture diagrams/roadmaps to support projects as a technical lead.

Voting Resume

Education

MS, Tufts University
Computer Science
2018 - 2021, 4.00
Completed Part-Time

BS, Tufts University
Computer Science, Minor in Philosophy
2012 - 2016, 3.87
Summa Cum Laude

Skills

	> 6m	> 1yr	> 2yr	> 4yr
HTML				●
React				●
Vue			●	○
Create React App				●
Nuxt.js			●	○
Next.js		●	○	○
Bootstrap			●	○
CSS				●
Tailwind			●	○
SASS			●	○
JavaScript				●
Node.js			●	○
Python			●	○
HL7's FHIR			●	○
GitHub Pages			●	○
Vercel		●	○	○
Docker			●	○
CI/CD Automation			●	○
Eslint/Prettier			●	○
Balsamiq			●	○

Experience

MITRE Corporation
Technical lead, developer, intern lead, dept. presentation coordinator

Lead Web Dev, 2021 - Now
Senior Web Dev, 2018 - 2021
Web Dev, 2016 - 2018

- Current technical lead & developer on MITRE's oncology moonshot, accelerating cancer data-standards adoption with Open Source applications for data capture, transformation, and visualization
- Prior technical lead & developer for 3+ software teams in charge of Open Source web applications, CLIs, APIs, visualizations, rich-text editors, multipage forms, and more
- Developer for 12+ MITRE projects in oncology, social justice, benefits delivery, and COVID-19
- Runs department presentation series, executed 25+ presentations and project feedback sessions
- Co-leads department internship program, mentoring 12+ undergraduate and graduate interns

Personal Projects

Ranked Choice Voting (RCV) Simulation Research
Explore RCV's impact on representativeness

Lead Designer & Web Dev, Sept 2020 - May 2021

Balsamiq · React · Bootstrap · Python

- Implemented a React web application and Python Flask API for running RCV election simulations
- Designed mockups for defining input parameters and visualizing election outcomes
- Created Flask API for running and aggregating 4 types of RCV simulation
- Visualize outcomes across simulation types, showing RCV's impact on how voters are represented
- Built in collaboration with Moon Duchin and Tufts' Metric Geometry & Gerrymandering Group (MGGG)

Elections and Tournaments
Explain frustrating voting patterns with graph theory

Solo Project, Summer 2020

React · Bootstrap · SASS

- Designed and implemented a React one-pager using Graph Theory to explore common frustrations in election outcomes
- Leveraged Tournaments and Ranked Voting to discuss Condorcet Winners, candidates who beat all others 1-on-1, and Condorcet Paradoxes, elections where every candidate loses to someone
- Visualized graphs of candidates using react-digraph & election outcomes using HTML tables

Gerrymandering & Markov Chain Monte Carlo Simulation
Use graph theory & simulations to identify gerrymandering

Solo Project, Spring 2020

Python · matplotlib · argparse

- Used markov chain monte carlo simulation to quantify how likely a voting district was gerrymandered
- Visualize frequency plot of simulated graphs' 'eccentricity' using matplotlib, showing outliership