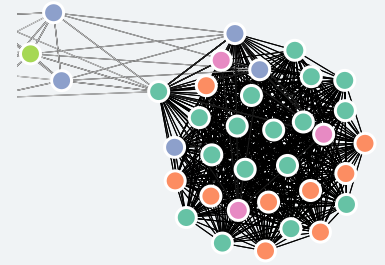# LIZ ROTEN

I am a highly motivated data scientist and cartographer with a passion for data visualization. I make complex topics easy to understand using compelling visual design. My static and interactive visualizations are attractive and powerful tools for decision making.

EXPERIENCE

Current | 2024

Senior Data Scientist
Metropolitan Council   St. Paul, MN

- Data scientist in travel research and modeling.
- Duties include data visualization, research methods and statistical model development, and R package development and maintenance.
- Promoted from standard in Februrary 2024

2024 | 2018

Data Scientist
Metropolitan Council   St. Paul, MN

- Data scientist in community development research and travel research and modeling.
- Duties include data visualization, research methods and statistical model development, and R package development and maintenance.
- Promoted from Associate in May 2021

2018

Research Intern
Metropolitan Council   St. Paul, MN

- Developed innovative method for using aggregated and anonymized location-based services (LBS)/ cell phone location data to analyze regional parks traffic patterns across multiple seasons and years.
- Independently created an interactive, online data visualization using open-source tools, such as R Shiny, and a git-based workflow.
- Successfully presented findings to stakeholders and provided complete documentation.

2018 | 2016

Every Penny Counts Emergency Financial Assistance Program Assistant
JustUs Health   St. Paul, MN

- Completed tasks such as check requests, posting, data management, record keeping, and program development.

2018 | 2015

Sexual Health Educator
Macalester College Health and Wellness Center   St. Paul, MN

- Collaboratively developed sexual health education curriculum for all first-year students
- Worked with student organizations and administrative offices to provide seminars on topics including sexual violence, Title IX Policy, and healthy relationships

CONTACT

✉ roten.elizabeth@gmail.com

🌐 lizroten.com

View this CV online with links at *lizroten.com*

KEY SKILLS

R
R Shiny
R package development
Quarto
HTML/CSS, JavaScript
Tableau
Adobe Illustrator
VS Code
JavaScript
Git/GitHub
ESRI Products
Project management

OPEN SOURCE CONTRIBUTIONS

`councilR` Organization specific package for consistent style and data practices.
`streetlightR` R wrapper for StreetLight InSight® API.
`covid-poops` Shiny app for monitoring COVID-19 viral presence in metro wastewater.

Submissions Manager

2017 | 2015

Persephone's Daughters

📍 Remote

- Helped produce a high quality literary magazine that fulfills the mission of empowering women who have experienced various forms of abuse and degradation.
- Organized all prose, poetry, and art submissions and direct an international staff via internet communication.

Teaching Fellow

2017 | 2015

Breakthrough Twin Cities

📍 St. Paul, MN

- Taught 7th and 9th grade students in Summers 2015 and 2016 with independently developed math and epidemiology curricula
- Planned and executed a leadership retreat for about 40 ninth grade students.
- Planned and executed a two hour show displaying our students' hard work to an audience of at most 650 people, as well as a display hallway, potluck, t-shirt, and planning necessary for each.

Health Advocate

2016 | 2016

Minnesota Internship Center Charter High School

📍 Minneapolis, MN

- Advocated for students ages 14-21 in doctor, dental, vision, and health insurance needs.
- Served as certified Mnsure navigator

Communications Chair

2014 | 2012

Tennessee Conference of the United Methodist Church

📍 Nashville, TN

- Elected by peers to direct photography and video production for large youth events
- Coordinated peers, administrative staff, and conference production company staff

🎓 EDUCATION

B.A., Geography, (Data Science, Community and Global Health)

2018 | 2014

Macalester College

📍 St. Paul, MN

- Emphasis on data science, GIS, quantitative research methods, and visual design

💻 SELECT PROJECTS AND TALKS

The 'I' in Team - Peer-to-peer best practices for growing data science teams

September 2023

posit::conf(2023)

📍 Chicago, IL

- How to gracefully expand your team without pulling your hair out

Transportation System Performance Evaluation

May 2023

Metropolitan Council

📍 St. Paul, MN

- A comprehensive review of the Twin Cities transportation system, built with R and Quarto

July 2022

Oddly Satisyfing - Find delight in the mundane

rstudio::conf(2022) 📍 Washington, D.C.

- How to take a project you hate and turn it into something you love

February 2022

COVID-19 Surveillance at the Metro Plant

Metropolitan Council 📍 St. Paul, MN

- Open source project and R Shiny app

December 2021

Regional Truck Corridor Study

Metropolitan Council 📍 St. Paul, MN

- Making a legacy project reproducible

March 2021

Regional Parks and the American Community Survey

Metropolitan Council 📍 St. Paul, MN

- Interactive visualization displaying regional parks and trails in context with American Community Survey (ACS) demographic data

February 2021

Twin Cities Rent Trends

Metropolitan Council 📍 St. Paul, MN

- Interactive dashboard for analyzing rental housing market trends in the seven-county Twin Cities region
- Users can compare metrics by data source and visualize the relationship between rent and vacancy rates

October 2020

Monitoring public adherence to social distancing guidelines with traffic data

2020 AMPO Virtual Conference 📍 Remote

- To estimate public adherence to social distancing guidelines during the Coronavirus outbreak, we analyzed departures from typical traffic volumes on the metro freeway system of the Twin Cities region. A robust modeling approach, open-source code repository, and web-based dashboard for interacting with the data are assisting decision makers in Minnesota as they update social distancing guidelines and monitor economic recovery.

October 2020

Using Location Based Services Data for Calculating the Greenhouse Emissions of Communities in the Minnesota Metropolitan Region

2020 AMPO Virtual Conference 📍 Remote

- To address the scarcity of transportation emissions data in Minnesota, the Metropolitan Council of the Twin Cities has developed greenhouse gas emission estimates for transportation and land for cities, townships, and counties of the Twin Cities Metropolitan Region. This session will demonstrate how to leverage big data to centralize this type of research, save public funding, and enable communities to focus their efforts on implementing strategies to become more sustainable.

October 2020

councilR

Metropolitan Council   📍 St. Paul, MN

- Created and maintained an organization specific R package
- Package includes templates, color palettes, and standard data processing functions

July 2020

Greenhouse Gas Emissions from Passenger and Commercial Transportation

Metropolitan Council   📍 St. Paul, MN

- Independently developed technique for estimating greenhouse gas emissions from commerical and passenger vehicles
- Collaborated with colleagues to include data in comprehensive greenhouse gas emissions inventory

July 2020

Minimum distance to COVID-19 testing facilities

Metropolitan Council   📍 St. Paul, MN

- A map series analyzing how COVID-19 testing centers are distributed across Minnesota

May 2020

A brief introduction to R packages and package development

Metropolitan Council   📍 St. Paul, MN

- Introduction to the R package I wrote for the Metropolitan Council
- I review the anatomy of an R package, highlight a few package features, and provide an overview of how to use GitHub for collaboration at the Council.

March 2020

Who is a local? Using aggregated cell phone location data to research regional parks visitors

Metropolitan Council   📍 St. Paul, MN

- Tallk and workshop for students on using aggregated location-based services (LBS) data to gain insights on regional parks visitors

June 2019

Como Regional Park Hex Grid StreetLight Analysis

Metropolitan Council   📍 St. Paul, MN

- Visualize high activity areas within Como Regional Park and seasonal trends

December 2017

3 Years of Mental Health: A quantified-self story

lizroten.com   📍 St. Paul, MN

- Mapping my travel patterns and mental health from 2015-2017

2017

Chuck Green Civic Engagement Fellowship

JustUs Health   📍 St. Paul, MN

- Independently researched mental health disparities through large-scale client survey and literature review
- Gathered comprehensive feedback from JustUs staff through focus groups and interviews

⊿ SELECT DATA SCIENCE WRITING

July 2022

Color Palette Exploration
lizroten.com

- Color palette exploration with ggplot2 and generative methods

April 2021

Radial rtistry
lizroten.com

- Generative art with ggplot2

March 2021

Maps with {edgebundle}
lizroten.com

- Mapping US flight networks

March 2021

Converting Peloton resistance to Bowflex C6 resistance
lizroten.com

- Visualizing spin bike difficulty

April 2020

Finding the perfect sock pattern with ravelRy
lizroten.com

- Using the Ravelry API to find just the right sock pattern

February 2021

How eMoods Aided My Recovery And Inspired My Data Science Career
emoodtracker.com

- Guest blog post on mental health and data science resulting from my "3 Years of Mental Health: A quantified-self story" project

February 2020

Housing Density in US Cities
lizroten.com

- Examining residential zoning in Pittsburgh, Austin, and Boston

October 2019

Fisk's 'Mississippi Meander' in R
lizroten.com

- A few maps inspired by Harold Fisk's 1944 geological investigation

November 2017

HIV and African American Populations in the US
Macalester College

- A value-by-alpha map showing the intersection of African American populations and HIV prevalence

I blog about data science and visualization on my website lizroten.com

🏆 AWARDS

2023 ● **Productivity and Goal Attainment**

Metropolitan Council   📍 St. Paul, MN

- Awarded for work on the Transporation System Performance Evaluation

2022 ● **Keystone Award**

Metropolitan Council   📍 St. Paul, MN

- A cross-functional team came together to effectively share our monitoring data on the Met Council's COVID-19 wastewater surveillance webpage and with the media.
- The Keystone Award recognizes employees who demonstrate exceptional work performance. The award recognizes employees for being good ambassadors for the agency and for delivering unique, exceptional and inspired projects.

2021 ● **Community Builder Award - Dream Team**

Metropolitan Council   📍 St. Paul, MN

- Awarded along with Todd Graham, Matt Schroeder, and Krysten Ryba-Tures for outstanding work in measuring and visualizing how the COVID-19 pandemic affects the region's workers and households with focus on race/ethnicity and cultural group disparities.