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 | 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 | 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
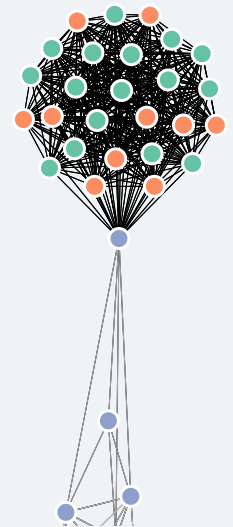
2017 | 2015

Submissions Manager
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.

CONTACT

- ✉ roten.elizabeth@gmail.com
- 🐦 LizRoten
- 😺 eroten
- 🔗 lizroten.com
- in eroten

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

TECHNICAL SKILLS

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

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.

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[1]

September 2023

posit::conf

📍 Chicago, IL

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

Transportation System Performance Evaluation[2]

May 2023

Metropolitan Council

📍 St. Paul, MN

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

Oddly Satisyfing - Find delight in the mundane[3]

July 2022

rstudio::conf(2022)

📍 Washington, D.C.

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

COVID-19 Surveillance at the Metro Plant[4]

February 2022

Metropolitan Council

📍 St. Paul, MN

- Open source project and R Shiny app

December 2021 ● **Regional Truck Corridor Study**[5]
Metropolitan Council
📍 St. Paul, MN

- Making a legacy project reproducible

March 2021 ● **Regional Parks and the American Community Survey**[6]
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**[7]
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**[8]
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**[9]
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**[10]
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 Transportationhttps://www.lizroten.com/project/greenhouse-gas-inventory/)**
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**[11]

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**[12]

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**[13]

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**[14]

Metropolitan Council

◉ St. Paul, MN

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

September 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**[16]

lizroten.com

- Color palette exploration with ggplot2 and generative methods

April 2021 ● **Radial rtistry**[17]

lizroten.com

- Generative art with ggplot2

March 2021 ● **Maps with {edgebundle}**[18]

lizroten.com

- Mapping US flight networks

I blog about data science and visualization on my website lizroten.com.[15]

March 2021	**Converting Peloton resistance to Bowflex C6 resistance**[19]
	lizroten.com
	• Visualizing spin bike difficulty

April 2020	**Finding the perfect sock pattern with ravelRy**[20]
	lizroten.com
	• Using the Ravelry API to find just the right sock pattern

February 2020	**Housing Density in US Cities**[21]
	lizroten.com
	• Examining residential zoning in Pittsburgh, Austin, and Boston

October 2019	**Fisk's 'Mississippi Meander' in R**[22]
	lizroten.com
	• A few maps inspired by Harold Fisk's 1944 geological investigation

August 2019	**Visualizing mental health data with ggplot2**[23]
	lizroten.com
	• Visualization project using my own daily mental health data
	• Designed both static infographic and animated plots

December 2017	**3 Years of Mental Health: A quantified-self story**[24]
	lizroten.com
	• Mapping my travel patterns and mental health from 2015-2017

November 2017	**HIV and African American Populations in the US**[25]
	lizroten.com
	• A value-by-alpha map showing the intersection of African American populations and HIV prevalence

🔗 LINKS

1. https://www.lizroten.com/team/
2. https://www.lizroten.com/project/tspe/
3. https://www.lizroten.com/oddly/
4. https://www.lizroten.com/project/covid-poops/
5. https://www.lizroten.com/project/truck-corridor-study/
6. https://www.lizroten.com/project/regional-parks-acs/
7. https://www.lizroten.com/project/twin-cities-rent-trends/
8. https://www.lizroten.com/talk/ampo-covid-traffic/
9. https://www.lizroten.com/talk/ampo-streetlight-ghg/
10. https://lizroten.com/project/councilr-package/
11. https://www.lizroten.com/project/mdh-covid-maps/
12. https://lizroten.info/talks/councilr/inst/presentations/a_brief_introduction/a_brief_introduction #1

13• https://lizroten.info/talks/streetlight_locality_workshop/streetlight_locality_workshop.html

14• https://www.lizroten.com/project/como-hex-streetlight-parks/

15• https://www.lizroten.com/post/

16• https://www.lizroten.com/post/color-palette-exploration/

17• https://www.lizroten.com/post/rtistry-with-contour/

18• https://www.lizroten.com/blog/maps-with-edgebundle/

19• https://www.lizroten.com/blog/bowflex-c6-to-peloton-resistance-conversion-plots/

20• https://www.lizroten.com/blog/finding-the-perfect-sock-pattern-with-ravelry/

21• https://www.lizroten.com/blog/housing-density-in-us-cities/

22• https://www.lizroten.com/blog/fisk-s-mississippi-river-meander-in-r/

23• https://lizroten.info/blog/posts/2019-08-31-emoods/

24• https://www.lizroten.com/blog/3-years-of-mental-health-a-quantified-self-story/

25• https://www.lizroten.com/blog/hiv-and-african-american-populations-in-the-us/