

# 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

### 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

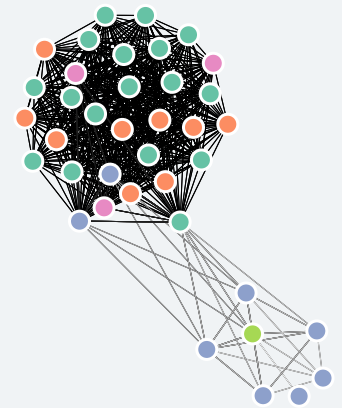
2017  
|  
2015

### 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

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🌐 [lizroten.com](http://lizroten.com)



View this CV online with links at  
[lizroten.com](http://lizroten.com)

## KEY SKILLS

R  
R Shiny  
R package development  
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.

2017  
|  
2015

### Teaching Fellow

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.

2016  
|  
2016

### Health Advocate

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

2014  
|  
2012

### Communications Chair

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

2018  
|  
2014

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

Macalester College

📍 St. Paul, MN

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



## SELECT PROJECTS AND TALKS

September  
2023

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

posit::conf(2023)

📍 Chicago, IL

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

May  
2023

### Transportation System Performance Evaluation

Metropolitan Council

📍 St. Paul, MN

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

July  
2022

### Oddly Satisfying - 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	<b>Regional Truck Corridor Study</b> Metropolitan Council <ul style="list-style-type: none"> <li>Making a legacy project reproducible</li> </ul>	St. Paul, MN
March 2021	<b>Regional Parks and the American Community Survey</b> Metropolitan Council <ul style="list-style-type: none"> <li>Interactive visualization displaying regional parks and trails in context with American Community Survey (ACS) demographic data</li> </ul>	St. Paul, MN
February 2021	<b>Twin Cities Rent Trends</b> Metropolitan Council <ul style="list-style-type: none"> <li>Interactive dashboard for analyzing rental housing market trends in the seven-county Twin Cities region</li> <li>Users can compare metrics by data source and visualize the relationship between rent and vacancy rates</li> </ul>	St. Paul, MN
October 2020	<b>Monitoring public adherence to social distancing guidelines with traffic data</b> 2020 AMPO Virtual Conference <ul style="list-style-type: none"> <li>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.</li> </ul>	Remote
October 2020	<b>Using Location Based Services Data for Calculating the Greenhouse Emissions of Communities in the Minnesota Metropolitan Region</b> 2020 AMPO Virtual Conference <ul style="list-style-type: none"> <li>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.</li> </ul>	Remote
October 2020	<b>councilR</b> Metropolitan Council <ul style="list-style-type: none"> <li>Created and maintained an organization specific R package</li> <li>Package includes templates, color palettes, and standard data processing functions</li> </ul>	St. Paul, MN
July 2020	<b>Greenhouse Gas Emissions from Passenger and Commercial Transportation</b> Metropolitan Council <ul style="list-style-type: none"> <li>Independently developed technique for estimating greenhouse gas emissions from commercial and passenger vehicles</li> <li>Collaborated with colleagues to include data in comprehensive greenhouse gas emissions inventory</li> </ul>	St. Paul, MN

July 2020	<b>Minimum distance to COVID-19 testing facilities</b> Metropolitan Council <ul style="list-style-type: none"> <li>• A map series analyzing how COVID-19 testing centers are distributed across Minnesota</li> </ul>	📍 St. Paul, MN
May 2020	<b>A brief introduction to R packages and package development</b> Metropolitan Council <ul style="list-style-type: none"> <li>• Introduction to the R package I wrote for the Metropolitan Council</li> <li>• 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.</li> </ul>	📍 St. Paul, MN
March 2020	<b>Who is a local? Using aggregated cell phone location data to research regional parks visitors</b> Metropolitan Council <ul style="list-style-type: none"> <li>• Talk and workshop for students on using aggregated location-based services (LBS) data to gain insights on regional parks visitors</li> </ul>	📍 St. Paul, MN
June 2019	<b>Como Regional Park Hex Grid StreetLight Analysis</b> Metropolitan Council <ul style="list-style-type: none"> <li>• Visualize high activity areas within Como Regional Park and seasonal trends</li> </ul>	📍 St. Paul, MN
December 2017	<b>3 Years of Mental Health: A quantified-self story</b> lizroten.com <ul style="list-style-type: none"> <li>• Mapping my travel patterns and mental health from 2015-2017</li> </ul>	📍 St. Paul, MN
2017	<b>Chuck Green Civic Engagement Fellowship</b> JustUs Health <ul style="list-style-type: none"> <li>• Independently researched mental health disparities through large-scale client survey and literature review</li> <li>• Gathered comprehensive feedback from JustUs staff through focus groups and interviews</li> </ul>	📍 St. Paul, MN



## 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](https://lizroten.com)



## AWARDS

2023

### **Productivity and Goal Attainment**

Metropolitan Council

📍 St. Paul, MN

- Awarded for work on the Transportation 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.