

# RAVEN MCKNIGHT

I am a statistician and data scientist committed to solving problems that help people. I have worked on projects with Metro Transit, Saint Paul City Council, and The National Gallery of Art.



## EDUCATION

2020  
|  
2016

- **B.A., Applied Math & Statistics**  
Macalester College 📍 Saint Paul, MN
  - Honors Thesis: Hierarchical Spatial Bayesian Models of Bus Ridership in the Twin Cities
  - Minors in Geography (GIS) and Creative Writing
  - Key coursework: Bayesian Statistics, Mathematical Statistics, Correlated Data, Statistical Machine Learning, Computational Linear Algebra, Urban GIS, Cultural Atlas Production, 2D Design



## WORK & TEACHING EXPERIENCE

2020  
|  
2018

- **Teaching Assistant**  
Macalester College 📍 Saint Paul, MN
  - Grade homework and hold 2-6 office hours per week across the math & statistics curriculum
  - Linear Algebra (Spring 2018, Fall 2018), Applied Multivariable Calculus 1 (Spring 2019), Correlated Data (senior capstone course, Fall 2019), Causal Inference (Spring 2020)

2019

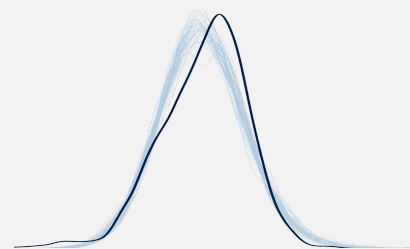
- **Research & Analytics Data Science Intern**  
Metro Transit 📍 Minneapolis, MN
  - Updated Metro Transit's Transit Market Areas in a practical, statistically rigorous manner
  - Support internal data requests, visualization, and Shiny app development
  - Facilitating collaboration with Macalester students to complete data science projects

2019  
|  
2018

- **Office Assistant**  
Macalester College 📍 Saint Paul, MN
  - Assist with department-wide planning & daily secretarial tasks in the Mathematics, Statistics, and Computer Science department office
  - Help run event such as weekly coffee break and annual block party

2017

- **Instructor**  
Cow Tipping Press 📍 Minneapolis, MN
  - Taught a radically inclusive writing workshop for adults with developmental disabilities
  - Developed engaging lessons for students with diverse backgrounds & abilities
  - Published student work and held successful public reading



## CONTACT

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## SKILLS

R, Shiny, Git, ArcGIS, QGIS, Leaflet, LaTeX, bookdown, blogdown, Python, SQL, Excel, Stan, JAGS, Hugo, Adobe Creative Suite

## INTERESTS

Spatio-temporal statistics  
Public health & epidemiology  
Public transit & urban planning  
RShiny development  
Reproducible research  
Open source, open data  
Visualization & design  
Civic engagement

Source code: [github.com/ravenmcknight/cv](https://github.com/ravenmcknight/cv).



## SELECTED PROJECTS

- 2019 ● **Data Science Researcher**  
National Gallery of Art 📍 Remote
- Analyzed the Gallery's collection for gender diversity in collection practices
  - Presented findings at the Gallery as the only undergraduate team
  - Developed prototype for an internal Shiny dashboard to monitor collections
- 2019 ● **Saint Paul 3K Initiative**  
Saint Paul City Council 📍 Saint Paul, MN
- Class project to support Saint Paul City Councilmember efforts to provide affordable, accessible childcare to all 3- and 4-year old children in Saint Paul through data visualization and GIS
  - Conducted primary data collection to develop database of existing childcare centers
- 2019 ● **Contraceptive Deserts: A Bayesian Analysis of Birth Control Access & Teen Pregnancy**  
Macalester College 📍 Saint Paul, MN
- Conducted an analysis of teen pregnancy rates in Minnesota using spatial Bayesian models
  - Calculated access to birth control clinics using Open Trip Planner
  - Findings suggest strong correlation between access to publicly-funded birth control clinics and low teen pregnancy rates
- 2019 ● **Wannabe Geographer's Guide to Census Geography**  
Macalester College 📍 Saint Paul, MN
- Final project for my 2D Design class
  - Combined my interests in geography, design, and education into a zine about census geography

I've conducted several spatial analyses using Conditional Autoregressive models. I'm excited to explore more applications in public health and disease risk modeling!



## VOLUNTEERING & SERVICE

- 2019 | 2018 ● **Hiring Committee Member**  
Macalester College 📍 Saint Paul, MN
- Recruited to be an equal voting member in the hiring process for mathematics, statistics, and computer science professors
  - Evaluated job applications, conducted interviews, and coordinated student involvement in campus visits
  - Participated in three successful searches
- 2019 ● **Class Agent**  
Macalester College 📍 Saint Paul, MN
- Nominated to be an agent and encourage students & alum to donate to Macalester in support of financial aid
  - Conduct fundraising outreach & education for peers on campus

- 2019 ● **Facilitator**  
Macalester College Data Science for Social Good 📍 Saint Paul, MN
- Co-run Macalester's Data Science for Good Group
  - Developing instructional material for students being introduced to "real world" data
  - Connect students to community partners, facilitate projects, and organize speakers on campus
- 2018 ● **Committee Member**  
Macalester Women in Math, Statistics, and Computer Science 📍 Saint Paul, MN
- Encourage gender diversity in Math, Statistics, and Computer Science through networking and professional development
  - Hold events such as female faculty panels and weekly study breaks
- 2017 |  
2016 ● **Macalester Mentor**  
Macalester College 📍 Saint Paul, MN
- Mentored low-income, first-generation high school students through the college application process
  - Led tours of Macalester's campus and spoke on panels about college life

## TALKS & PRESENTATIONS

- 2019 ● **Intention in Acquisition**  
National Gallery of Art 📍 Washington, DC
- Presentation of a [Shiny app](#) and key takeaways at Coding Our Collection: The National Gallery of Art Datathon
  - Developed app using R package [golem](#) and wrote naive users guide for collaborators