

# DAMON M. BAYER

## Statistics PhD Student

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📍 Orange County, CA

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## EXPERIENCE

### Data Science Intern

#### Tidepool

📅 March 2019–Present

📍 Remote

- Conducting statistical analysis to support premarket submission for Loop, an open-source, automated insulin delivery controller.
- Collaborating with product and medical advisory teams to make data-informed decisions about product features.

### Data Science Intern

#### Query.AI

📅 May 2018–July 2018

📍 Remote

- Researched and developed natural language understanding software for enterprise chatbot application.

### Software Quality Assurance Student

#### Daktronics, Inc.

📅 June 2013–Aug. 2013

📍 Brookings, SD

- Wrote tests for software and firmware in Daktronics products.

## SELECTED PROJECTS

### Estimating and Forecasting SARS-CoV-2 Transmission

- Bayesian model written in Stan.
- Maintained website for real-time forecasting in Orange County.

### Variable Selection for Clustering on the Unit Hypersphere

#### Master's Thesis

- Methodological development for automatic variable selection using model-based clustering on spherical data.
- Implemented in FvMLM R Package.

### Topic Modeling the Daschle Collection

- Summarized constituent emails and archival documents using topic modeling.
- Presented findings to former Senate Majority Leader Tom Daschle.

### Improving Communication of Forensic Evidence to Jurors

- Designed and analyzed survey to assess the rationality of jurors.
- Developed visual aids to improve the rationality of jurors' decision making.

## EDUCATION

### Ph.D. Statistics

#### University of California, Irvine

📅 2018 – 2023

📍 Irvine, CA

- Research Interests: Bayesian methods for the analysis of infectious disease data

### M.Sc. Math & Statistics

#### South Dakota State University

📅 2016 – 2018

📍 Brookings, SD

- Arnold K. Skeie Analytics Graduate Fellow
- Senator Thomas A. Daschle Student Fellow

### B.Sc. Math & Statistics

#### South Dakota State University

📅 2013 – 2016

📍 Brookings, SD

- Honors College Distinction

## DISTINCTIONS



#### Teacher

4 years experience instructing and tutoring undergraduates in math and stats



#### Broadcaster

Host of radio shows and podcasts



#### Traveler

Study abroad experience in Ecuador

## SKILLS & SPECIALTIES

#### Computing:

R

Python

Stan

LaTeX

git

#### Statistics & Applications:

Text Data

Clustering

Mobile Health

Infectious Diseases

MCMC

#### Coursework:

Machine Learning

Asymptotic Statistics

Statistical Computing

Bayesian Statistics

Correlated Data

Stochastic Processes

# PUBLICATIONS

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## Journal Articles

- Fintzi, Jonathan et al. (Sept. 2020). "Using multiple data streams to estimate and forecast SARS-CoV-2 transmission dynamics, with application to the virus spread in Orange County, California". In: *arXiv:2009.02654 [q-bio, stat]*.
- Bayer, Damon and Semhar Michael (Apr. 2019). "Exploring the Daschle Collection using Text Mining". In: *arXiv:1904.12623 [cs, stat]*.
- Bayer, Damon (2018). "Variable Selection Techniques for Clustering on the Unit Hypersphere". In: *South Dakota State University*.
- Bayer, Damon, Cedric Neumann, and Anjali Ranadive (2016). "Communication of Statistically Based Conclusions to Jurors-A Pilot Study". In: *Journal of Forensic Identification* 66.5, pp. 405–427.

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## Poster & Oral Presentations

- Michael, Semhar and Damon Bayer (July 2019). "Variable Selection Techniques for Model-based clustering of directional data". In: *Joint Statistical Meetings*. Denver, CO.
- Bayer, Damon and Semhar Michael (Feb. 2018). "Variable Selection Methods for Clustering with Mixtures of von Mises–Fisher Distributions". In: *SDSU Data Science Symposium*. Brookings, SD. Awarded third place overall.
- – (Oct. 2017). "Topic Modeling the Daschle Collection". In: *Daschle Scholars Meeting*. Brookings, SD. Private meeting with former Senate Majority Leader Thomas Daschle.
- Bayer, Damon (Apr. 2016). "The 2016 Presidential Primary Debates: a Natural Language Processing Analysis". In: *SDSU Undergraduate Research, Scholarship, and Creative Activity Day*. Brookings, SD. Awarded second place in Math, Engineering, and Physics.
- – (Apr. 2015). "Improving the Communication of Forensic Evidence to Jurors: a Pilot Study". In: *SDSU Undergraduate Research, Scholarship, and Creative Activity Day*. Brookings, SD.
- Bayer, Damon and Jessie Hendricks (July 2015). "Statistical Interpretation of Forensic Evidence". In: *South Dakota Experimental Program to Stimulate Competitive Research*. Pierre, SD.