DAMON M. BAYER

Statistics PhD Student

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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 Intern
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

📄 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.

👥 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.