

DAMON M. BAYER

Statistics & Machine Learning PhD Student

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EXPERIENCE

Summer Intern

Query.AI

📅 May 2018–July 2018

📍 Remote

- Researched and developed natural language understanding software for enterprise chatbot application built on DialogFlow and Rasa.
- Managed time and met deadlines while working remotely.

Software Quality Assurance Student

Daktronics, Inc.

📅 June 2013–Aug. 2013

📍 Brookings, SD

- Documented bugs in firmware and software of Daktronics products.
- Wrote test cases to improve thoroughness and consistency of testing.

SELECTED PROJECTS

Variable Selection for Clustering on the Unit Hypersphere

Master's Thesis

- Awarded 3rd place at SDSU Data Science Symposium.
- Methodological development for automatic variable selection using model-based clustering on spherical data (text data, in particular).

Topic Modeling the Daschle Collection

Funded Research Project

- Summarized constituent emails and documents using statistical techniques.
- Presented findings to former Senate Majority Leader Tom Daschle.

Human Rights Data Analysis Group - Kosovo War Data

Final Project for Modern Applied Statistics

- Analyzed several data sets to determine whether refugees left their homes to avoid NATO bombings and the Kosovo Liberation Army, or to avoid "ethnic cleansing" by the Yugoslav army.
- Used data visualization and linear regression to assess these hypotheses.

The 2016 Presidential Primary Debates

Bachelor's Thesis

- Awarded 2nd place in Math, Engineering, and Physics at SDSU URSCAD.
- Scraped candidate speeches from the web using R.
- Created classifier to identify Democratic and Republican speeches.

Statistical Interpretation of Forensic Evidence

Funded Research Project

- Conducted statistical simulation to compare two frameworks for the statistical interpretation of forensic evidence.

Improving the Communication of Forensic Evidence to Jurors

Published Research Project

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

EDUCATION

PhD Statistics (4.00/4.00)

University of California, Irvine

📅 2018 – Present

📍 Irvine, CA

MS Math & Statistics (4.00/4.00)

South Dakota State University

📅 2016 – 2018

📍 Brookings, SD

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

BS Math & Statistics (3.94/4.00)

South Dakota State University

📅 2013 – 2016

📍 Brookings, SD

DISTINCTIONS



Traveler

Study abroad in Quito, Ecuador and Manitoba, Canada



Teacher

2 years experience instructing and tutoring undergraduate students in math and statistics



Broadcaster

Host of several campus radio shows and podcasts

SKILLS & SPECIALTIES

Computing:

R Python SAS \LaTeX

Statistics:

Text Data Clustering Methods
Data Visualization

Coursework:

Machine Learning Predictive Analytics
Regression Asymptotic Statistics
Statistical Computing
Modern Applied Statistics

PUBLICATIONS

Journal Articles

- Bayer, Damon and Semhar Michael (2018b). “Variable Selection Techniques for Clustering on the Unit Hypersphere”. In: *Submitted*.
- 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 Presentations

- Bayer, Damon and Semhar Michael (2018a). “Variable Selection Methods for Clustering with Mixtures of von Mises–Fisher Distributions”. In: *SDSU Data Science Symposium*. Brookings, SD. Awarded third place overall.
- – (2017). “Topic Modeling the Daschle Collection”. In: *Daschle Scholars Meeting*. Brookings, SD. Private meeting with former Senate Majority Leader Thomas Daschle.
- Bayer, Damon (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.
- – (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 (2015). “Statistical Interpretation of Forensic Evidence”. In: *South Dakota Experimental Program to Stimulate Competitive Research*. Pierre, SD.