

ERIN H. BUGBEE

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RESEARCH INTERESTS

Human and machine learning, decision science, data science, computational cognitive science, artificial intelligence, reinforcement learning, predictive analytics, statistical inference, moral psychology, AI ethics

EDUCATION

Brown University

Sc.B., Statistics (Honors Candidate)

A.B., Behavioral Decision Sciences, Specialization in Human and Machine Learning

Overall GPA: 3.95/4.0

Providence, RI

Expected: May 2020

RESEARCH EXPERIENCE

Honors Senior Thesis and Senior Capstone

Advisors: Lorin Crawford, Ph.D. and Matt Nassar, Ph.D.

Brown University

Fall 2019 – Spring 2020

- *Reinforcement Learning in Brains, Minds, and Machines*

Sloman Lab

Advisor: Steven Sloman, Ph.D.

Brown University

Fall 2019 – Present

- *Trust in the Workplace: Are Machines Interchangeable With People?*

Learning, Memory, and Decision Lab

Advisor: Matt Nassar, Ph.D.

Brown University

Spring 2019 – Present

- Researching reinforcement learning in dynamic environments. Affiliated with Carney Institute for Brain Science.

Collaborative Research on Music Information Retrieval

Advisor: Katherine Kinnaird, Ph.D.

ICERM

Summer 2017 – Present

- REU in Topological Data Analysis affiliated with Brown Data Science Initiative. Developed an efficient and accurate method for detecting cover songs.
- Applying techniques from machine learning and topological data analysis to music information retrieval tasks.

Crawford Lab, Department of Biostatistics

Advisor: Lorin Crawford, Ph.D.

Brown University

Fall 2017 – Fall 2018

- Used Bayesian statistical modeling to detect genes involved in treatment resistance in prostate cancer. Collaboration with Duke University and the Duke Cancer Institute.

PUBLICATIONS

Conference Papers

(Peer-Reviewed)

McGuirl, M.R., Kinnaird, K.M., Savard, C. and **Bugbee, E.H.**, “SE and SNL Diagrams: Flexible Data Structures for MIR,” Proceedings of 19th ISMIR Conference, Paris, France, 2018.

(Abstract-Reviewed)

Savard, C., **Bugbee, E.H.**, McGuirl, M.R., and Kinnaird, K.M., “SuPP and MaPP: Novel MIR Data Structures Inspired by Topological Data Analysis,” Extended abstracts for the Late-Breaking Demo Session of the 19th International Society for Music Information Retrieval Conference, Paris, France, 2018.

In Preparation

SuPP and MaPP: Adaptable Music Representations for Structure-based Approaches to MIR Tasks

HONORS AND AWARDS

Class of '81 Undergraduate TAsip for Women in CS *Spring 2019*

- Awarded by the Brown Department of Computer Science.

Disney Data & Analytics Women Scholarship Recipient *August 2018*

- Scholarship to attend Disney Data & Analytics Conference in Orlando, FL.
- Presented music information retrieval machine learning research.

Outstanding Poster Award, Joint Mathematics Meetings *January 2018*

- For “Comparing Songs Using Matrix Pattern Preservation” in San Diego, CA.

INDUSTRY EXPERIENCE

Sales Analytics & Insights Intern *Orlando, FL*
The Walt Disney Company *Summer 2019*

- Analytics for the Disney Cruise Line, predicting Disneyland Anaheim attendance by determining leading indicators for international markets using regression analysis, analyzing flight data for John Wayne Airport

Explore Microsoft Intern *Redmond, WA*
Microsoft *Summer 2018*

- Program Manager and Software Engineer for Microsoft Support Engineering, Universal Store Team, Cloud + AI

TEACHING EXPERIENCE

HEAD TEACHING ASSISTANT

CSCI 0100: Data Fluency for All *Fall 2019*

Department of Computer Science, Professor: Amy Greenwald, Ph.D.

- An introductory data science course emphasizing data literacy, statistics, machine learning, and data visualization through the R programming language.

UNDERGRADUATE TEACHING ASSISTANT

CSCI 1951a: Data Science *Spring 2019*

Department of Computer Science, Professor: Ellie Pavlick, Ph.D.

- An upper-level computer science course teaching Python and SQL.

CLPS 0220: Making Decisions *Spring 2019*

*Department of Cognitive, Linguistic, and Psychological Sciences,
Professor: Steven Sloman, Ph.D.*

- Introduction to decision-making through normative and descriptive principles.
Covered optimal decision-making, choice and preference, heuristics.

APMA 1655: Advanced Statistical Inference I *Fall 2018*

Department of Applied Mathematics, Professor: Caroline Klivans, Ph.D.

PHP 1501: Essentials of Data Analysis *Fall 2018*

Department of Biostatistics, Professor: Roee Gutman, Ph.D.

- Introductory data analysis course using R with applications to biostatistics.

CSCI 0100: Data Fluency for All *Fall 2017*

Department of Computer Science, Professor: Amy Greenwald, Ph.D.

RESEARCH PRESENTATIONS

TALKS

Research Talk, “*Comparing Songs Without Listening*”

Brown Math Slam (Society for Industrial and Applied Mathematics/AWM)

Brown University, November 8, 2018

Paper Presentation, “*SE and SNL Diagrams: Flexible Data Structures for MIR*”

The International Society of Music Information Retrieval Conference (ISMIR)

Paris, France, September 23-27, 2018

Workshop, “*Introduction to R Programming*”

Brown Datathon

Brown University, March 3, 2018

POSTER PRESENTATIONS

Joint Mathematics Meetings

“Comparing Songs Using Matrix Pattern Preservation”, San Diego, CA, January 12, 2018

NEMISIG (Northeast Music Informatics Special Interest Group)

“Comparing Songs Using Matrix Pattern Preservation”, Brown University, January 27, 2018

Women in Data Science

“Comparing Songs Using Matrix Pattern Preservation”, Worcester Polytechnic Institute, March 5, 2018

LEADERSHIP AND SERVICE

Brown Data Science Club

President, 2019 – Present

- Lead students interested in data science. Organize the annual Brown Datathon and events throughout the year to create a campus community in data science.

Marketing Team Leader, 2018 – 2019

- Developed branding of Brown Data Science, including logo, website, t-shirts, and internal and external outreach.

Outreach Team Member, 2017 – 2019

Club Member, 2016 – 2017

Women in Machine Learning Workshop

Reviewer, 2019

Ivy League Data Analytics Conference

Co-Organizer, 2019 – Present

- Collaborate with other Ivy League leaders to plan a joint conference.

Statistics Departmental Undergraduate Group (DUG)

DUG Leader, Brown University, 2018 – Present

- Lead and plan events for the Statistics concentration.

Diversity & Inclusion Committee, Department of Biostatistics and Center for Statistical Sciences

Undergraduate Representative, 2018 – Present

Brown University Admissions

Science Tour Guide, 2017 – Present

Women in Science and Engineering

Mentor, 2017 – 2019

- Mentor for women interested in data science, computer science, and statistics.

CONFERENCES AND TRAVEL AWARDS

ASA Association Women in Statistics and Data Science 2019

The American Statistical Association, Bellevue, WA, October 2-5, 2019

Travel funded by ASA WSDS Student Travel Award and Brown Data Science Initiative

Disney Data & Analytics Conference (DDAC) 2019

The Walt Disney Company, Orlando, FL, August 20-22, 2019

Statistics and Data Science Conference (SDSCon)

MIT Media Lab, Cambridge, MA, April 5, 2019

News vs. Truth Seminar with Former President of CNN Jon Klein and Steven Sloman

Brown University, Providence, RI, Spring 2019

Collaborate@ICERM 2019: Topological Data Analysis and Music Information Retrieval

ICERM, Providence, RI, January 7-11, 2019

Travel funded by ICERM

Machine Intelligence Conference

MIT Media Lab, Cambridge, MA, November 3, 2018

ISMIR 2018

International Society of Music Information Retrieval, Paris, France, September 23-27, 2018

Travel funded by ISMIR Student Travel Grant and the Brown Data Science Initiative

Disney Data & Analytics Conference (DDAC) 2018

The Walt Disney Company, Orlando, FL, August 28-29, 2018

Travel Funded by the Disney Data & Analytics Women Scholarship

Women in Data Science (WiDS) 2018

Worcester Polytechnic Institute, Worcester, MA, March 5, 2018

North East Music Information Special Interest Group (NEMISIG) 2018

Brown University and Spotify, Providence, RI, January 27, 2018

Joint Mathematics Meetings 2018

The American Mathematical Society and the Mathematical Association of America, San Diego, CA, January 10-13, 2018

Travel Funded by JMM Student Travel Grant and ICERM

PROFESSIONAL AFFILIATIONS

American Statistical Association, 2018 – Present

Alpha Chi Omega, 2017 – Present

Chapter Relations and Standards Board Representative, Class of 2020 Risk Representative

The Brown Daily Herald, 2016 – Present

Copy-editor

COMPUTER SKILLS

Programming: R, Python, MATLAB, SQL, Java, Stata, Javascript, HTML, CSS