ERIN H. BUGBEE

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SUMMARY

- Statistics, Data Science, Artificial Intelligence, Decision Science Student at Brown University
- Published Researcher in Topological Data Analysis, Machine Learning, and Statistical Algorithms
- Teaching Assistant, Student Leader, Tour Guide, Copy-editor
- Intern at Microsoft in the Cloud + Artificial Intelligence Division

EDUCATION

Brown University *Providence, RI* • Expected Graduation May 2020

- *Sc.B. Candidate:* Statistics
- *A.B. Candidate:* Behavioral Decision Sciences, Specialization in Artificial Intelligence
- *GPA:* Estimated 3.95/4.0
- *Relevant Past Coursework:* Intro to Object-Oriented Programming, Intro to Data Science, Computing in Brains and Computers, Data Structures and Algorithms, Discrete Structures and Probability, Linear Algebra, Linguistics of Wordplay, Statistical Inference I and II, Essentials of Data Analysis, Intermediate Microeconomics, Making Decisions, Management of Industrial and Nonprofit Orgs, Econometrics, and Data, Ethics, and Society
- *Courses for Fall 2018:* Artificial Intelligence, Psychology in Business and Economics, Statistical Computing in R, Principles of Biostatistics and Data Analysis

RESEARCH EXPERIENCE

ICERM, *Undergraduate Researcher* *Providence, RI* • Summer 2017—Present

- Summer@ICERM (Institute for Computational and Experimental Research in Mathematics) REU researching Topological Data Analysis. Affiliated with Brown Data Science Initiative.
- Applied techniques from persistent homology to Music Information Retrieval. Developed machine learning algorithms for comparing sequential data streams with aligned hierarchies. Clustering songs in ways resembling how humans listen to music.
- Presented at NEMISIG 2018 and Women in Data Science 2018.

Brown University Department of Biostatistics, *Undergraduate Researcher* *Providence, RI* • Fall 2017—Present

- Working in Crawford Lab with Professor Lorin Crawford in collaboration with Duke University and the Duke Cancer Institute.
- Applying Bayesian Statistics, Time Series Analysis, and methods in Econometrics to areas of Biostatistics. Using statistical modelling to detect genes fundamental in treatment resistance in prostate cancer. Performing analysis in R.

PUBLICATIONS

- Co-author of **"SE and S_NL Diagrams: Flexible Data Structures for MIR."** Accepted to the 19th Proceedings of the International Society for Music Information Retrieval Conference, in Paris, France, 2018, a peer-reviewed journal. Attended ISMIR 2018 in Paris to present publication.
- Co-First Author of **"SuPP and MaPP: Novel MIR Data Structures Inspired by Topological Data Analysis."** Late-Breaking session of the 2018 International Society for Music Information Retrieval Society Conference.
- Future publications pending, regarding continued work from Summer@ICERM and work with Crawford Lab.

TECHNICAL EXPERIENCE

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

- Cloud & AI Platform, Universal Store Team, Microsoft Support Engineering Group.
- Implemented HTML, SASS, Typescript, Angular.
- Developing portal that incorporates support case submission and chatting with a Virtual Agent and the handling of customer service data.

Data Science, Computer Science, and Decision Science

- Programming experience in *R, Python, Java, Stata, MATLAB, HTML, CSS*, and *Javascript*.
- Knowledge of data structures and algorithms, machine learning techniques, topological data analysis, statistical computing in R, topic modeling, Bayesian Statistics, regression, clustering and classification, and Music Information Retrieval.

TEACHING EXPERIENCE

Brown University Division of Applied Mathematics, *Undergraduate Teaching Assistant* Fall 2018

- APMA 1655: Statistical Inference I, Advanced

Brown University Department of Biostatistics, *Undergraduate Teaching Assistant* Fall 2018

- PHP 1501: Essentials of Data Analysis, an introductory data analysis course taught using R.

Brown University Department of Computer Science, *Undergraduate Teaching Assistant* Fall 2017

- CSCI0100: Data Fluency for All, an introductory data science course emphasizing data literacy, statistics, machine learning, and data visualization through the usage of the R programming language.

AWARDS

- Collaborate @ ICERM 2019: Topological Data Analysis and Music Information Retrieval
- Disney Data & Analytics 2018 Women Scholarship Recipient, including attending the Disney Data & Analytics Conference in August with all expenses covered. Presented Machine Learning Music Information Retrieval research and results.
- Outstanding Poster Award, 2018 Joint Mathematics Meetings for *Comparing Songs Using Matrix Pattern Preservation.*

LEADERSHIP EXPERIENCE/EXTRACURRICULAR ACTIVITIES

Center for Statistical Sciences and Department of Biostatistics, Diversity and Inclusion Committee Fall 2018-Present

- Undergraduate Representative

Statistics Departmental Undergraduate Group (DUG) Leader Fall 2018-Present

Brown Data Science Club, *Marketing Team Leader* Fall 2017-Present

- Organizer of Brown Neurodatathon 2017, Datathon 2018, Datathon 2019.
- Hack@Brown and Brown Datathon 2017 participant. Outreach Team Member for 2017-2018.

Science Tour Guide Spring 2017—Present

The Brown Daily Herald, *Copy-Editor* Fall 2016 – Present

American Statistical Association Student, *Member* January 2018-Present

Alpha Chi Omega, *Member and Chapter Relations and Standards Board Representative* Spring 2017-Present

Women in Computer Science (WiCS)/ Women in Science and Engineering (WISE), *Member and Mentor* Fall 2016-Present

SKILLS & INTERESTS

Language French (Conversational Proficiency)

Interests Golf, singing, cooking, coffee, knitting, violin and fiddling, traveling, Disney