Benjamin Draves

Education

2017 – Present **Boston University**, *Ph.D. Candidate, Statistics*.
Dissertation Adviser: Dr. Daniel Sussman
Qualifying Exams: Probability Theory, Applied Statistics

2018 **Boston University**, *M.A, Statistics*, *GPA – 4.0*.
Preliminary Exams: Mathematical Statistics, Applied Statistics

2014–2017 **Lafayette College**, *B.S, summa cum laude, Mathematics*, *GPA – 3.9*.
Honors Thesis: Treelet Covariance Smoothers
Departmental Honors

Research Interests

Random Network Science, Spectral Statistics of Random Matrices, High Dimensional Statistics

Research Projects

Current Work: *Multiple Network Embeddings*

- Joint work with Dr. Daniel Sussman (Boston University)
- Graph embedding techniques map vertices of the graph to latent vectors in low-dimensional Euclidean space. For multiple networks over the same vertex set, with possibly different latent vectors, we preform graph analysis by jointly embedding these graphs into a common vector space. We then prove central limit theorems for this embedding and determine the bias and variance introduced by this estimation scheme.

Past Work: *Treelet Covariance Smoothers*

- Joint work with Dr. Trent Gaugler (Lafayette College)
- Developed and analyzed iterative smoothing techniques that denoise sparse covariance matrices. By exploiting correlative structures in the data, we iteratively construct a basis that more naturally captures the variance in the dataset. Smoothing is then achieved by thresholding the eigenvalues in this improved spectral representation. In preparation.

Teaching Experience

2018-Present **Statistical Consulting Practicum**, *Lead Consultant and Lab Instructor*.

2016-2017 **Applied Statistics**, *Supplemental Instructor*.

2016-2017 **Applied Statistics**, *Lab Instructor*.

2015-2017 **Calculus**, *Calculus Tutor for 6 independent calculus courses*.

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Leadership & Professional Societies

BUSCASA — **Board Member of Boston University's Student Chapter of the American Statistical Association**, *2018-Present*.

BU Network Seminar — **Organizer of BU Student Network Seminar**, *2018-Present*.

ASA — **American Statistical Association Member**, *2017-Present*.

Pi Mu Epsilon — **President of undergraduate mathematical honor society**, *2016*.

IT & Library Committee — **Student Representative to the Faculty**, *2016-2017*.

Relevant Work Experience

National Interstate — **Data Analyst Intern**, *2017*.
Designed and implemented a predictive model for pricing claim severity and frequency using boosted generalized regression trees

Private Consulting — **Statistical Consultant**, *2015 - Present*.
Clients include:

- Crayola.com
- University of Mount Union Academic Affairs
- Victaulic
- Easton Area Public Schools
- Easton Area Neighborhood Center

Awards

2017-2018 Boston University Dean's Fellowship

2017 Wesleyan DataFest Award Winner: Best Data Preparation

2017 Benjamin F. Barge Oratorical Prize: Most compelling honors thesis defense

2017 Wesley S. Mitman Prize: Most outstanding student in mathematics

2017 James P. Crawford Prize in Mathematics: Mathematics community award

Programming Capabilities

Proficient — R, Python, Java, Bash, Git, Github

Intermediate — PostgreSQL, C/C++

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