Benjamin Draves

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Education

2017 – Present	**Ph.D. Candidate, Statistics**, *Boston University*. Dissertation Adviser: Dr. Daniel Sussman
2018	**M.A., Statistics**, *Boston University*, *GPA − 4.0*.
2014–2017	**B.S., *summa cum laude*, Mathematics**, *Lafayette College*, *GPA − 3.9*. Honors Thesis: *Treelet Covariance Smoothers*. Adviser: Dr. Trent Gaugler Departmental Honors

Ongoing Research Projects

Multiple Network Embeddings

Graph embedding techniques map vertices of a graph to vectors in low-dimensional Euclidean space. For multiple networks over the same vertex set, with possibly different connectivity structure, we perform 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.

Treelet Covariance Smoothers

Developed and analyzed iterative smoothing techniques that denoise sparse, positive-definite matrices. By exploiting correlative structures in the data, we iteratively construct a basis that naturally captures the variance in the dataset. Smoothing is then achieved by thresholding the eigenvalues in this improved spectral representation. Work presented at Moravian College Student Mathematics Conference. Manuscript submitted to *Statistical Applications in Genetics and Molecular Biology*.

Work Experience

Freelance Consulting	**Statistical Consultant**, *2015 - Present*. Current Clients: *Crayola.com* Past Clients: *University of Mount Union Academic Affairs, Victaulic, Easton Area Public Schools, Easton Area Neighborhood Center*
National Interstate	**Data Analyst Intern**, *2017*. Designed and implemented a predictive model for pricing claim severity and frequency using boosted generalized regression trees

Teaching Experience

2018-Present	**Statistical Consulting Practicum**, *Lead Consultant and Lab Instructor*, Boston University. ○ Manage 14 statistics masters students working in Boston University's consulting center ○ Oversee consulting projects in weekly lab meetings and guide statistical decision making
2016-2017	**Applied Statistics**, *Supplemental Instructor*, Lafayette College. ○ Created and taught bi-weekly review sessions for an introductory statistics course
2016-2017	**Applied Statistics**, *Lab Instructor*, Lafayette College. ○ Worked individually with students teaching R and statistical computing methods
2015-2017	**Calculus**, *Calculus Tutor for 6 independent calculus courses*, Lafayette College.

Leadership & Professional Societies

BUSCASA	**Board Member**, *Boston University Student Chapter of the ASA*, 2018-Present.
BU Network Seminar	**Organizer**, *Boston University's Weekly Network Seminar*, 2018-Present.
ASA	**Member**, *American Statistical Association*, 2017-Present.

Pi Mu Epsilon	**President**, *Undergraduate Mathematical Honor Society*, 2016.
IT & Library Committee	**Student Representative to the Faculty**, *2016-2017*.

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

Research Interests

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

Programming Capabilities

Proficient	R, Python, Java, Bash, Git, Github
Intermediate	PostgreSQL, C/C++