BENJAMIN DRAVES

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EXPERIENCE

Statistical Consultant 2016 - Present

- *Consulting Manager*: Oversaw a team of 14 masters students working in BU's consulting center. Led statistical decision making, managed team workflows, and interfaced with clients throughout the project life cycle.
- *Freelance Consulting*: Provided statistical consulting services to 6 clients in industry and academia.

Sample Project 1
Created recommendation system for first-year college students selecting intro. math courses. Fit GMM and ℓ_2-regularized logistic regression (R/Python) to provide personalized recommendations for each student. Built interactive app (R-Shiny) for easy use.

Sample Project 2
Predicted no. of visits and duration of treatment for concussion patients at PT center. Fit ℓ_1-regularized GLMs (R-glmnet) to determine if survey tool was effective in predicting outcome. Results used to refine survey tool and presented at professional conference.

Sample Project 3
Predicted changes in cerebral blood flow in injured mice over time. Fit generalized additive mixed effects model (R-lme4). Identified differences in test/control group using likelihood ratio tests.

Sample Project 4
Clustered geographic regions based on species assemblage. Fit NMDS (R-vegan) to visualize and cluster geographic regions. Validated clusters by comparing with geographic locations.

Data Analyst Intern: *National Interstate* June - August 2017
Implemented a boosted, generalized regression tree (R-TDboost/SQL) to predict claim frequency and severity. Enabled team to utilize ensemble techniques resulting in increased confidence in traditional modeling approaches.

PROGRAMMING CAPABILITIES

Proficient R (dplyr, tidyverse, ggplot2), Python (pandas, numpy, matplotlib, scikit-learn), GitHub.
Intermediate SQL, Java, SAS, MATLAB, Mathematica.
Other LaTex, R Markdown, Unix Environment.

RESEARCH PUBLICATIONS & PROJECTS

Spectral Embeddings of Multiple Networks 2018 - Present.

- Developed unsupervised learning algorithms for collections of networks. Algorithms include community detection, dimensionality reduction, and clustering of network observations.
- Manuscript submitted. Preprint: *here*. Repository: *here*.

Denoising Sparse Covariance Matrices 2016 - Present.

- Developed method for ℓ_1-regularized covariance estimation. Implemented in R and applied to GWAS.
- Manuscript under revision. Repository: *here*.

EDUCATION

Boston University - Boston, MA *Degree expected 2021*
Ph.D Candidate in Statistics, M.A. in Statistics GPA: 3.98

- Qualifying Exams: *Applied Stat., Probability.* Preliminary Exams: *Mathematical Stat., Applied Stat.*
- Relevent Coursework: Machine Learning, Non/Semi-Parametric Data Modeling, Computational Statistics, Generalized/Linear Models, Bayesian Statistics/Computation, Network Analysis & Algorithms.

Lafayette College - Easton, PA *May 2017*
B.S. in Mathematics, *Summa Cum Laude* GPA: 3.90

- Honors: Departmental Honors with Thesis, Barge Oratorical Prize (most compelling thesis defense), Mitman Mathematics Award (most outstanding mathematics major), DataFest 2017 Award Recipient.