ALEXANDER DASILVA

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Computational social scientist with 5+ years experience teaching and utilizing statistical methods for inference, prediction, and classification applied to people-centric data. I excel working in teams to uncover insightful and innovative data-driven solutions.

EDUCATION

Dartmouth College | PhD Student, Psychological and Brain Sciences — Sept 2015 - Expected June 2021

Iowa State University | BS Honors, Psychology; Minor in Statistics — Aug 2010 - Dec 2014

TECHNICAL SKILLS

Programming: R (expert), familiar with python, SQL, bash

Modeling Techniques: regularization, xgboost, mixed effect models, LM/GLM

Reproducible Computing: Git, knitr, rmarkdown, JupyterLab

Data Reduction & Visualization: ggplot2, R Shiny, PCA, MDS, factor analysis

EXPERIENCE

PhD Student | Dartmouth College — Sept 2015 - Present

Mobile Sensing and Personality

- Collaborated with computer scientists as the R programmer and modeler in one of the first projects linking brain imaging data (~2 TB) to behavioral data inferred through smartphone sensing (~220 GB) to comprehensively model personality
- Applied statistical and machine learning models (xgboost and glmnet) to predict weekly changes in stress and mood from hundreds of passively collected smartphone features (e.g., movement, conversation, phone usage, physical activity)
- Utilized lme4 and base R to implement techniques such as (G)LM regression, vector autoregression, and mixed modeling to relate mobile sensing features and brain imaging data to personality measures
- Cleaned and munged data from smartphones that were sampled every 10 minutes from ~ 300 students over a 3-year period using packages from the tidyverse; validated and contrasted methods (maximum likelihood vs multiple imputation), via simulations, for handling complex missing longitudinal data
- Published 3 papers (with 5 more in review/prep) in leading health informatics, neuroscience, and computer science journals that contributed to securing a multi-year $3,000,000 grant

Health Informatics

- Worked among a small team of researchers as a data extraction specialist and modeler to assess thematic content in the online reviews of medical professionals
- Scraped and processed 2,000,000 web ratings/reviews of medical doctors with rvest and housed reviews and doctor demographic data in a relational database using SQL
- Employed LDA to uncover topical patterns in the reviews and built machine learning models with xgboost to predict quality ratings (multiclass classification) and gender (binary classification) from topic weights
- Discovered novel evidence for a gendered competency bias in the reviews of physicians; findings to be presented at a leading human behavior conference

Teaching

- Headed lab sessions for courses in statistics and experimental design with class sizes ranging from 10-50 students
- Rated as a clear and effective lecturer (average rating = 4.7/5) when teaching a unit on regression by 30 students

AWARDS

NIH/NIDA T32 Predoctoral Fellow — Sept 2015 - Present

Finalist – Dartmouth Hackathon Advanced Division (https://tastespace.shinyapps.io/tastespace/) — Apr 2019

1st - Thayer Consulting Case Competition sponsored by Google and McKinsey — Feb 2019

George Washington Carver Scholar — Aug 2010 - Dec 2014

ACTIVITIES

Towards Data Science Contributing Writer (https://medium.com/@awdasilva21) — July 2018 - Present

Dartmouth Graduate Consulting Club Member — Mar 2018 - Present

BIAS (Building Inclusivity for the Advancement of Science) member — June 2017 - Present