ALEXANDER DASILVA

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

EDUCATION

Dartmouth College | PhD Candidate, 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: elastic net, xgboost, mixed effect models, LM/GLM, GAM

Reproducible Computing: Git, knitr, Rmarkdown, JupyterLab

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

EXPERIENCE

Merck | North Wales, PA — June 2020 - Aug 2020

Promotion Optimization Data Science Intern

Member of the Advanced Analytics team: provided data-driven recommendations for the allocation of promotional resources for multiple product lines

- Built an automated pipeline in R that used GAMs and gradient boosting models to predict product sales from promotional data and generate promotion response profiles to estimate market saturation points across advertising channels
- Created and validated a model agnostic metric to assess marketing channel impact, providing analysts with a straightforward framework for estimating channel contributions to sales regardless of model complexity
- Met weekly deadlines while working in a fast-paced environment and shared progress reports containing code, comments, and figures with project managers via reproducible Rmarkdown files
- Communicated findings from complex models to higher management and cross-functional team members using Shapley values, PDPs (1D and 2D interactions), and ICE plots

Dartmouth College | Hanover, NH — Sept 2015 - Expected June 2021

PhD Candidate | Psychological & Brain Sciences

Collaborated with computer scientists as the R programmer and modeler in the first ever project using mobile sensing to continuously track student behavior over their entire college career

- Cleaned and formatted data from smartphones that were continuously sampled from ~ 300 students over a 3-year period using packages from the tidyverse; validated and contrasted methods (maximum likelihood vs multiple imputation) for handling complex missing longitudinal data
- Fit hierarchical spatiotemporal models (GAM) using mgcv to model GPS and conversation data detected via smartphone speakers to understand how social patterns developed on campus and changed over time
- Applied glmnet to predict weekly changes in stress and mood from hundreds of passively collected smartphone features (e.g., movement, conversation, phone usage, physical activity)
- Published 6 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

Teaching

Taught 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 regression unit by 30 students

AWARDS

National Institute of Health Predoctoral Fellow — Sept 2015 - Sept 2020

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