

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:	Modeling Techniques:	Reproducible Computing:	Data Reduction & Visualization:
R (expert), familiar with python, SQL, bash	elastic net, xgboost, mixed effect models, LM/GLM, GAM	Git, knitr, Rmarkdown, JupyterLab	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 multimillion-dollar product lines

- Built an automated pipeline in R, currently in use by multiple brand teams, that generated promotion response profiles using GAMs and gradient boosting models to estimate market saturation points across advertising channels, reducing analyst time by ~50%
- 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 on Drug Abuse 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