ALEXANDER DASILVA

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Data scientist with 6+ years' experience utilizing statistical methods for inference, prediction, and classification applied to real-world patient-level data. I excel working in teams to uncover impactful and innovative data-driven solutions.

EDUCATION

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

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

TECHNICAL SKILLS

Programming:	**Modeling Techniques**:	**Repro. Computing:**	**Data Reduction & Viz**:
R (expert), familiar with python, SQL, bash	elastic net, xgboost, mixed effect models, (G)LM, GAM	Git, Rmarkdown, JupyterLab, Quarto	ggplot2, R Shiny, PCA, MDS, factor analysis

EXPERIENCE

Merck | North Wales, PA — Aug 2021 - Present

Data Scientist (Promotion Optimization)

Commercial Analytic Solutions (Senior Specialist): provided data-driven recommendations for the allocation of promotional resources for multiple industry leading product lines

- Informed the investment of ~$80MM in promotion across HCC (linear TV, streaming TV, online video, paid search, display, audio, social) and HCP (email, alert, e-detail, banner) over multiple vaccine brands
- Constructed biannual marketing mix models (LM/mixed models/ridge) for 3 brands to estimate HCC & HCP promotional contribution to sales and derived key performance metrics (incr. revenue, ROI) from model outputs
- Communicated findings to multiple departments (Data Science/Marketing) across varying levels (from specialist to VP) of the organization; adept at tailoring decks/presentations for diverse audiences
- Modeled HCP (~620k HPCs) email click responses (3.5MM deliveries) from historic behavior and email content features using xgboost emphasizing interpretable machine learning methods (shapley, PDPs) to estimate the incremental contribution of distinct email content combinations
- Created a Rshiny application to facilitate investment planning, consolidating a multi-tab multi-excel sheet process into one tool which generates promotion response curves and computes optimal channel level resource allocation leveraging a nonlinear optimization routine (NLopt)

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

PhD Candidate | Psychological & Brain Sciences

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

- Published 13 papers in leading health informatics, neuroscience, psychology, and computer science journals that contributed to securing a multi-year $3,000,000 grant
- Cleaned and formatted data from smartphones that were continuously sampled from ~ 300 students over a 4-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 depressive symptoms from hundreds of passively collected smartphone features (e.g., movement, conversation, phone usage, physical activity)