

BILL PETTI

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Senior data science and analytics professional with experience leading high performing teams and increasing the value organizations derive from their data

RECENT PROFESSIONAL EXPERIENCE

Maritz Motivation, St. Louis, MO | *For over 100 years, Maritz Motivation has designed and delivered rewards-based loyalty, recognition and incentive programs*

Director & Lead Data Scientist, Decision Sciences, 1/2019-Present

- Provide leadership related to data culture and literacy, data pipeline and workflow, insight and model generation for clients and internal research and development.
- Responsible for establishing and applying data science and methodological standards across the Decision Sciences group and the larger organization.
- Spearheaded the development of Maritz Motivation's first cross-client data product using generalized additive models to predict employee attrition based on features developed from Maritz's employee recognition platform. Workgroups deemed high-risk by the model exhibited 5x the attrition of low-risk groups. Data and predictions delivered and visualized through a Shiny application.
- Devised and built a novel customer segmentation approach for a leading e-commerce company to optimize their digital marketing efforts using a combination of UMAP dimension reduction and k-means clustering, as well as random forests for classification. The model was actionable in identifying a narrower group of high potential customers to target, with a recall of 75% for high value/highly loyal customers.

The Gallup Organization, Washington, DC | *Gallup is an analytics and advisory firm delivering insights into political, socioeconomic, consumer, and employee opinions and behaviors.*

Global Data Strategist & Subject Matter Expert: Predictive Analytics & Data Science, 6/2012-12/2018

- Led global strategy development and implementation for Gallup in the areas of advanced analytics, modeling, and automation. Responsible for direct day-to-day management and development of five data scientists and statisticians, as well as recruiting, hiring, training, and development strategy for all advanced analytical consultants globally.
- Designed and led the execution of a forecast improvement project for a major global supplier of key components for mobile electronic devices built with an ensemble model of individual ARIMA, Support Vector Machines, and k-NN models, improving forecast accuracy by 77%.
- Developed an instructor turnover model using random forests for a national educational firm built on HRIS, behavioral, and local market data that led to an initial 33% decrease in turnover and helped decrease time-to-fill by 27% by using predicted turnover as the trigger for the recruiting process.

Senior Consultant, 6/2010-6/2012

- Lead consultant for a \$3M+ portfolio, responsible for methodological design and execution of client research while managing teams of 10-20 consultants executing complex engagements and responsible for managing relationships with strategic clients in the consumer goods, health care, hospitality, and pharmaceutical industries.
- Designed and executed customized, mixed-methodology research for a world-leading luxury hotel management company to determine both the revenue potential of group guests as well as the causes of their disengagement with the brand. Analysis and recommendations led to a \$30M+ increase in annual revenue.

SKILLS

- **Statistics/ML:** Variety, including linear regression, logistic regression, hierarchical regression, generalized additive models, decision trees, random forests, stochastic gradient boosting, k-nearest neighbors, Gaussian mixture models and associated clustering methods (k-means, k-modes, etc.), UMAP dimensionality reduction.
- **Technical Stack:** R, Shiny, MySQL, PostgreSQL, Git, Tableau, h2o, DigitalOcean, Google Cloud Platform (BigQuery, Storage, Data Studio), Bash, Shell.
- **Qualitative Skills:** Include small-n research design, focus groups, as well as ethnographic/observational research.

ADDITIONAL ACTIVITIES

- Provided advanced analytical consulting for several major league baseball front offices (2013-2017)
- Created an introductory tutorial for the R programming language. (<https://bit.ly/2ZTWg9G>)
- Maintain a package for the R programming language that includes various functions for acquiring and analyzing baseball data. (<https://goo.gl/ZnyFYL>)

EDUCATION

- **University of Pennsylvania**, Philadelphia, PA, M.A. (2006), pursued Ph.D. (ABD, 2013) Political Science
- **Temple University**, Philadelphia, PA, M.A. (2003), Political Science
- **The College of New Jersey**, Ewing, NJ, B.A. (2000), Political Science (Honors Program)