

EDUCATION

- University of California, Berkeley** – Master of Information and Data Science April 2019
Relevant coursework: Statistical Methods; Applied Machine Learning; Experiments; Data Engineering; NLP with Deep Learning
Project portfolio: https://github.com/colbycarter/Data_Science_Portfolio
- College of the Holy Cross, Worcester, MA** May 2012
Bachelor of Arts, *cum laude*, Economics and Mathematics GPA: 3.67/4.00

TECHNICAL SKILLS

R (e.g. dplyr, caret), Python (Jupyter, NumPy, pandas, scikit-learn, xgboost), SAS/SQL (Teradata), AWS EC2 & S3

PROFESSIONAL EXPERIENCE

- Liberty Mutual Insurance** Boston, MA
Principal Analyst, Data Science, Agent & Distribution Insights February 2019-current
- Research data science opportunities, build and deploy models in R and Python, and design experiments for evaluation
 - Build agent-level propensity models to target agents with the largest opportunity to sell Safeco policies; develop SAS to AWS data pipeline; and analyze effectiveness of marketing campaigns using randomized holdouts
 - Research and develop model solutions to reduce call queue time and transfer rates within policy service call center
 - Improved and deployed final tree-based model in Python to predict policy cancellation risk for agent intervention pilot
- Consultant*, Advanced Analytics, Special Investigative Unit (SIU), Claims July 2017-February 2019
- Developed and deployed gradient-boosted tree models in R targeting high severity, intentional auto accidents in partnership with fraud investigation experts, mitigating \$100k in nonmeritorious claim losses
 - Generated potential fraud indicators and interaction terms from numerous data sources and statistically evaluated predictive power for proactive sourcing reports and fraud models
 - Quantified effects of new processes such as investigative vendor usage and changes in policy underwriting rules on fraud detection and investigative claims volume using statistical testing
 - Forecast regional investigation demand to assist staffing decision-making and curtail extreme workloads, plus reported on key performance metrics including productivity, case inventory, cycle time, quality and vendor usage
- Senior Analyst*, Advanced Analytics, CX/QI/NF/SIU, Claims January 2016-June 2017
- Developed inaugural OLS and logistic regression models to identify key operational metrics associated with customer claim satisfaction scores and recommended areas of strategic focus to business leaders, such as cycle time targets
 - Built models forecasting monthly claims volume and staffing needs based on employee productivity targets and regional policy growth expectations to aid staffing decisions for SIU, No Fault and Subrogation claims field operations
 - Estimated linear time series and autoregressive models to predict future J.D. Power claims satisfaction scores by carrier
 - Produced key claims data for quality improvement reviews of field performance using stratified sampling
- Analysis Group**, Economic Consulting Boston, MA
Senior Analyst/Analyst February 2014-December 2015
- Assisted with expert reports, analysis and other client deliverables in economic litigation across multiple industries
 - Rigorously cleaned and standardized several large client datasets representing billions of dollars in automobile part sales using SAS and SQL for purposes of assessing economic damages
 - Developed dynamic models and exhibits in Excel estimating lost sales and profits but-for alleged anticompetitive behavior by brand and generic pharmaceutical manufacturers
 - Supported research on alternative television-viewing platforms and difference-in-difference statistical analysis of survey data to estimate consumer preferences
 - Became internal expert on major software client's large-scale SQL sales databases and delivered on ad hoc requests
 - Automated web-scraping of prescription drug price data from public online resources using VBA and SAS
- Concentric Energy Advisors** Marlboro, MA
Assistant Consultant/Analyst June 2012-January 2014
- Contributed to expert reports on cost of capital for North American electric and gas utilities; contributions included regulatory research, data collection, DCF and CAPM financial modeling, and regression analysis
 - Built interactive, price-optimizing models in Excel for electric generators in the New England electric market auctions
 - Evaluated fair market value and replacement cost of power-generating assets of nearby plant for sell-side advisory
 - Forecasted demand for natural gas distribution in Massachusetts with econometric models using SPSS
 - Categorized costs of a major nuclear plant upgrade and assisted with drafting of expert testimony in support of client