BRIAN GRINER, PhD

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TECHNICAL SKILLS

- ***Computer Languages & Operating Systems/Containers & Parallel Computing Environments***: Python, SAS, R, SQL, Java, PySpark, Unix/Linux Bash Script, RegEx; Unix, Linux (Red Hat, Amazon Linux, Ubuntu); Docker, VirtualBox, Anaconda/Python virtual environments; Spark on MapR, H2O, Intel Distribution Python
- ***Databases, Data Visualization***: Oracle/SQL developer, MySQL, Redshift (aws), SQLite, Power BI, tableau, Matplotlib, Seaborn, Bokeh (Python), Shiny (R)
- ***Marketing Science:*** HB Choice-Based Conjoint Modeling, Mixture Regression, Latent Class**,** Segmentation, Optimal Experimental Designs, New Product/Market Simulation
- ***Digital Marketing Analytics***: sparsity models to analyze large server logs predict site click through rates and identify top performers
- ***Econometric Modeling:*** Promotion-Response Modeling**,** Multi Channel Promotional Mix Optimization, Sales Force Effectiveness and Quality, Dynamic Modeling of Panel Data, General Equilibrium Models for Policy Simulation
- ***Statistical and Machine Learning*** (scikit-learn, numpy, scipy, pandas):
    - *Supervised Learning*: for regression and classification
    - *Unsupervised Learning*: multivariate data partitioning and subgroup identification
    - *Ensemble Learning*: model voting/averaging to enhance performance)
    - *Feature Engineering*: to identify and extract a subset of key predictors from large data sources
    - *Hyper Parameter Optimization*: to optimize model performance
    - *Pipelines*: for model deployment/automation
    - *Feature Importance* (Partial Dependence Plots, Permutation Importance and Shap Values): for identifying KPIs and underlying factors driving performance
- ***Deep Learning***: (keras/TensorFlow, NLTK, beautiful soup, gensim):
    - *Neural Language Processing*: sentiment analysis and topic modeling
    - *Computer Vision*: automated image captioning and neural image style transfer
- ***Digital Marketing Analytics***: sparsity models to analyze large server logs predict site click through rates and identify top performers
- ***Clinical / HEOR Modeling:*** Kaplan-Meiers, Proportional Hazards (Cox), General Linear Model (GLM), logistic regression, Bayesian hierarchical modeling

SOFT SKILLS

- **Communication**: strong writer and presenter, ability to communicate technical concepts and project finding to a non-technical audience
- **Project Management & Delivery**: experienced at translating business questions and needs into focused projects that identify resources required, scope of work, timing/staging of project deliverables
- **Teamwork**: experience working in collaborative cross-functional/cross-departmental project teams to leverage team expertise to create and deliver innovative, high value project results

EDUCATION

UNIVERSITY OF PITTSBURGH SCHOOL PUBLIC & INTL. AFFAIRS

PhD Public Policy Research Methods
1997-1998 Doctoral Program Award (Academic Excellence in Dissertation Research)
MPA Public Administration

WEST CHESTER UNIVERSITY

BA Communications (Magna Cum Laude)
Swope Foundation Award (Academic and Leadership Achievements)
Finnegan Foundation Award & Internship (Financial Award & Summer Internship in State Government)

RUTGERS UNIVERSITY

Certification: Oracle SQL and PL/SQL + Python Developer + Java Programmer (5 month program)

EXPERIENCE

02/2018 to 05/2018 **ASSEMBLY**

Director, Analytics for Big Pharma Account Team

- Helped the account teamwork with new data sources linking media campaigns to patient quality, Rx conversion and ROAS.
- Worked with DevOps team on automating ingestion of new data sources into AWS Redshift database platform connected to a Tableau server.

09/2017 **NOVARTIS**

Contractor

- IT consulting on identification of key data elements and specifications of meta data to support implementation of MapR Spark/Hadoop enterprise data lake initiative.

06/2017 to Present **DATA SCIENCE & LEARNING SYSTEMS, LLC**

Founder

Create new business insights from healthcare data through the integration of Economic Theory, Statistics, Machine Learning and Deep Learning to analyze both traditional and new data sources: images, text, internet log files, mobile data sensors.

Examples include:

- **Online Dashboard for Immuno-Oncology Clinical Trial**. Created pipeline process for transforming clinically validated SDTM and ADaM SAS datasets into interactive web dashboard with plots and graphs defined in the Statistical Analysis Plan that allowed the users to click on graphs and drill through to the ADaM and SDTM data tables. Plots provided include interactive Kaplan-Meier plots for OS, PFS, TTE and Waterfall charts to measure Tumor Response over time for individual patients in different Best Response categories
- **Stock Price Velocity, Acceleration, Jerk and Snap?** *Identifying Hidden Signals of Market Change with Optimized Multivariate-Multi Step MLPs, LSTMs and CNNs for Time Series Modeling of Higher Order Motion Derivatives in Physics and Their Relationship to Stock Price Dynamics* (with Thomas Ball)
- **Tiger Style Reunion Web App**. Neural Image Style Transfer Web App Deployed on AWS for 2019 Princeton Reunion
- **TextAnalyzer Python class for Sentiment Analysis**. Analyze text from websites, text files and raw strings
- **Statistical Homogeneity Hypothesis Testing**. Analysis of international import/export data to inform public policy decisions
- **Oncology and Diabetes Influencer Network Modeling**
- **Predicting Heterogeneous Risk Factors and Prognostic Symptom Clusters for Prevention and Management of Pre-Diabetes and Metabolic Syndrome with Ensemble Learning**
- **Time Series Forecasting of Retail Sales using Long Short-Term Memory networks**
- **Digital Display Ad Resource Allocation Model** to target top performing publisher domains for prioritizing media spend using sparsity algorithms in machine learning
- **Neural Image Captioning Generator with Attention** for social media photo tagging site
- **Machine Learning at Scale using H2O and PySpark on distributed systems**
- **Promotion-Response Econometric Model** for rep email campaigns
- **Sentiment Analysis and Topic Modeling** for inbound call center data
- **AI Training Courses**. Combine classroom learning with coding labs and simulated startup projects deploying applications in a team environment. Example: Innovation Lab partnership with Princeton School of AI at the Princeton Library Tech Center

2016 to 2017 **BOEHRINGER INGELHEIM**

Director, Data Strategy & Innovation

- Rx influencer modeling using open source physician referral data
- Rx promotion-response modeling for rep email campaigns
- Sentiment analysis and topic modeling for inbound call center data

2012 to 2015 **QUINTILES**

Chief Methodologist, Advisory

- Patient-based line of therapy physician treatment choice model and market share simulator using the GE EMR data in NOAC market
- Bayesian network to simulate healthcare buying process in immunology using pharmacy, medical and hospital claims data

OTHER RELEVANT EMPLOYERS
Kantar Health, Biovid, SBR, TargetRx

PUBLICATIONS, PRESENTATIONS, POSTERS & POSTS

- 2019 *On the Art of Data Science and Learning Systems*: Stock Price Velocity, Acceleration, Jerk and Snap? Identifying Hidden Signals of Market Change with Optimized Multivariate-Multi Step MLPs, LSTMs and CNNs for Time Series Modeling of Higher Order Motion Derivatives in Physics and Their Relationship to Stock Price Dynamics
    - https://github.com/briangriner/notebooks/blob/master/multivariate_multistep_mlp_lstm_cnn_hyper_parameter_optimization_model_checkpoint_performance_on_test_8_16_19.ipynb
- 2018 Central NJ Deep Learning Meetup at Tigerlabs: Tuning the Beast: Review of LSTM Tuning Methods for Forecasting Time Series
    - https://briangriner.github.io/Tuning_the_Beast-TimeSeriesForecasting_using_LSTMs.html
- 2018 *Future Pharma Commercial Data Insights Conference*: Practical Applications for Building A Commercial Center of Excellence: Digital Analytics Case Study
    - https://github.com/briangriner/presentations/blob/master/CommericalDataInsights_DigitalAnalyticsCaseStudy-11.15.18.pdf
- 2018 *On the Art of Data Science and Learning Systems*: A Machine Learning Approach for Identifying Symptom Clusters that Predict Pre-diabetes: A study of the Pima Indians
    - https://github.com/briangriner/presentations/blob/master/ML_prediabetes_predictive_symptom_clusters-8.28.18.pdf
- 2018 *Princeton Library Tech Class*: Using Partial Dependence Plots in ML to Measure Feature Importance
    - https://briangriner.github.io/Partial_Dependence_Plots_presentation-BrianGriner-PrincetonPublicLibrary-4.14.18-updated-4.22.18.html
- 2018 *NYC Big Data Science Meetup*: Practical Machine Learning that Scales: Using H2O with Python to Accelerate ML and DL
    - https://github.com/briangriner/notebooks/blob/master/Practical_ML_Scale_H2O_presentation-BrianGriner-NYC_Big_Data_Science-6.5.18-updated-6.7.18-FINAL.ipynb
- 2018 *On the Art of Data Science and Learning Systems*: Neural Image Captioning Generator with Attention
    - https://github.com/briangriner/ImageCaptioningGenerator
- ICAAC/ICC 2015 – *55th Interscience Conference on Antimicrobial Agents and Chemotherapy*: Inconsistency in Defining Profound and Prolonged Neutropenia for Antifungal Prophylaxis Decisions A. H. Sung1, T. Rhodes1, J. Arduino1, S. W. Marcella1, R. Stolper2, M. Meyer2, D. Kombe2, B. Griner2; 1Merck & Co., Inc., Kenilworth, NJ, 2Quintiles, Durham, NC
    - https://www.researchgate.net/publication/283516343_Inconsistency_in_Defining_Profound_and_Prolonged_Neutropenia_for_Antifungal_Prophylaxis_Decisions
- 2015 *Value in Health* abstract: Comparison of Machine Learning, Statistical and Hybrid Methods to Identify Predictors of Positive Treatment Outcomes in Comorbid Conditions Using EMR Data I. Lipkovich, B.P. Griner, J. Niemira, C. Jin, Value in Health 05/2015; 18(3):A101-A102. DOI:10.1016/j.jval.2015.03.594
    - https://www.valueinhealthjournal.com/article/S1098-3015%2815%2900651-8/fulltext
- 2015 *ISPOR 20th International Annual Meeting*, Reviewer, Philadelphia, PA.
- 2014 *ISPOR 17th Annual European Congress*:
    - *Prevalence-Based Measure of the Economic Burden of Rare Diseases: Case Review to Determine the Annual Cost of Acromegaly in France. https://www.valueinhealthjournal.com/article/S1098-3015(14)03596-7/fulltext*
    - *Prevalence-Based Measure of the Economic Burden of Rare Diseases: Case Review to Determine the Annual Cost of Acromegaly in Italy. https://www.valueinhealthjournal.com/article/S1098-3015(14)03598-0/fulltext*
- Reviewer, *ISPOR Statistical Analyses – Good Research Practices Task Force*: Conjoint-Analysis-Statistical-Methods-Guidelines
    - https://www.ispor.org/docs/default-source/editorials-for-gprs/conjoint-analysis-statistical-methods-guidelines-editorial.pdf?sfvrsn=e579545f_2
    - June 2014 *Life Science Leader*: Navigating the New World of Value-Based Healthcare https://www.lifescienceleader.com/doc/navigating-the-new-world-of-value-based-healthcare-0001
- 2014 *Pharma Market Research Conference*: Using Bayesian Networks: Unified Physician-Patient Segmentation, Targeting and Positioning of New Products
- 2013 *Pharmaceutical Market Research Group National Annual Conference*: Navigating the New World of Value-Based Healthcare: A Quantitative Approach to Modeling Value Drivers to Simulate Global Market Access, Reimbursement and Pricing for New Therapies
- 2013 *Quintiles White Paper*: Navigating the New World of Value-Based Healthcare: Global Trends and Regulatory Reforms That Will Shape the Future of Healthcare
- 2012 November – December *PharmaVoice*: 2013: Year in Preview, Marketing experts identify trends that will have the most impact on the marketing landscape in the next five years

- 2012 *Sawtooth Software Conference and Proceedings*: Leveraging the Upper Level Models in HB for Integrated Modeling of Multiple Stakeholders and Decision Processes in Complex Market Environments
- 2010 *PBIRG University Annual General Meeting*: Using Primary Patient Level Data to Bring Market Opportunity Assessments to Life
- 2009 *American Marketing Association Advanced Research Techniques Forum*: A Dynamic Framework for Modeling Multistakeholder Interaction –A Pharmaceutical Case Study
- 2008 *Pharmaceutical Marketing Research Group Institute*: Building a Framework that Embraces the Interdependence between Physicians, Nurses and Patient Therapy Decisions
- 2007 *Pharmaceutical Marketing Research Group Institute*: Stairway to … Stickiness! How Benefits Laddering and Message Optimization Help Build a Product Story

DISSERTATION RELATED PUBLICATIONS

- Stephen Farber, Brian Griner: Valuing watershed quality improvements using conjoint analysis.
    - Ecological Economics 07/2000; 34(1-34):63-76. DOI:10.1016/S0921-8009(00)00153-1
- Stephen Farber, Brian Griner: Using Conjoint Analysis to Value Ecosystem Change†.
    - Environmental Science and Technology 03/2000; 34(8). DOI:10.1021/es990727r
- Brian Griner, Stephen Farber: A Conjoint Analysis of Water Quality Enhancements and Degradations in a Western Pennsylvania Watershed.
    - 06/1996; Watersheds ’96 Conference Proceedings: pp. 635-638.