**SEAN RIGGS**

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| **ANALYTICAL EXPERIENCE** | |
| Regression Analysis/Modeling | Back Testing |
| Statistics | Data Engineering |
| Data Analysis | Data Cleaning/Manipulation |
| Time Series Forecasting | Predictive Modeling |

**Software Proficiency:** SAS, Python, R, SQL, PySpark, shell scripting, HDFS, Tableau, GitHub

**Microsoft Skills:** Excel, PowerPoint, Word

**EDUCATION**

***Master of Science in Economics, UNC Charlotte; Charlotte, NC (2014-2016)***

* Graduate Econometrics, Advanced Business Forecasting, Advanced Macroeconomics, Financial Econometrics, Financial Management
* Awarded merit based graduate assistantship

***Bachelor of Science in Economics, NC State University; Raleigh, NC (2009-2014)***

* Graduated Cum Laude

**WORK EXPERIENCE**

**Wells Fargo-Quantitative Associate** (June 2018-Present)

* Worked with external MIT-IBM team on implementation of Graph Learning Attention Mechanism (GLAM) model for predicting the growth of account balances. The model used a modified Graph Attention Network structure to create a sparse graph structure based on geographical features of accounts. It was implemented using PyTorch and PyTorch Geometric libraries.
* Contributed to internal python modeling library by creating a module for economic variable interpolation and common variable transformations used across different model development teams.
* Using R, automated excel process of generating different CCAR and LOB forecast scenarios for 18 interest rate paid model segments. Worked across teams to automate back-test and forecast graph production into model documentation.
* Translated code from one programming language to another.
  + - Transferred model tool that interpolated model predictions from quarterly to monthly frequency from R into SAS and worked with relevant stakeholders to transfer the tool from development into production.
    - Transformed credit card model development code from SAS to python. This involved data cleaning, model estimation, and prediction. Successfully replicated model coefficients and significance tests for 18 segments using the logistic regression algorithm to produce probability of default estimates.
    - Transformed SAS macros commonly used for development purposes into python functions. These functions performed data cleaning/transformation, model estimation, and aggregating final model predictions.
* Used back-testing code in python to compare production model to challenge model using gradient boosting as an alternative framework. Explored using GridSearch with cross validation to tune hyper-parameters and using feature importance to exclude unimportant variables from challenge model.
* Developed graphics function in python to plot comparison of final gross loss predictions for the production model using logistic regression framework compared to gradient boosting. Function allowed for plotting individual graphs for user-specified number of model components, including aggregated results across all components.

**Bank of America-Quantitative Finance Analyst** (August 2017-April 2018**)**

* Responsible for running as many as 20 statistical tests as part of the validation process for logistic regression credit scorecard models. Primary responsibilities included modifying and developing SAS Macros to perform key statistical tests to evaluate model accuracy, discriminatory power, and sensitivity to changes in model parameters.
* Worked with developers to understand complex methodologies and data manipulations such as the creation and replication of pseudo default datasets used for scorecard modeling.
* Developed challenger models with alternative inputs and data manipulations to provide effective challenge to models submitted by developers.
* Performed quarterly ongoing monitoring for 10 credit scorecard models, and documented results using Latex for typesetting.

**Wells Fargo-Forecast Analyst /Analytic Consultant** (September 2015-August 2017)

* Used SAS Macro language programming to quickly loop through multiple forecasting models to efficiently back-test alternative predictive models, incorporating both multiple regression analysis and Box-Jenkins time series analysis to select the best model. Used automated code to back-test challenger models using cross-validation, and holdout sample. Presented findings to management and business partners.
* Re-developed Bankruptcy inflow forecasting model using multiple regression model with seasonal adjustment that resulted in forecasting error being reduced by more than 50% for both short and long-term forecasts.
* Took initiative to integrate R functionality within the SAS environment through Proc IML. Educated forecast team on the capabilities of using R and SAS together and lead the effort to automate forecasts using user-built R functions.
* Worked with other teams to employ use of Box-Jenkins Methodology to identify seasonality in time series and select appropriate ARIMA forecasting model specification.
* Automated forecasting models and KPI metrics using both SAS language, as well as advanced excel VLOOKUP and match index functions.
* Developed Service Release forecasting process and expanded it from three lines of business to encompass all of default servicing. Communicated regularly with forecast owners for each line of business.
* Leveraged SQL server database to automate manual reporting tasks that had previously been done in Excel by building a forecast history SQL table which automatically updated KPI accuracy metrics. Developed complex SQL queries using subqueries to pull data from multiple data sources and perform data transformations.
* Developed 10 ad hoc forecasts across the Bankruptcy business in support of capacity tool development to help senior leaders, and business partners to better understand the key drivers of the Bankruptcy forecast.
* Responsible for tracking forecasting accuracy across multiple lines of business and using these accuracy metrics to determine where improvements in forecasting methodology could be made. Developed KPI metrics to track accuracy using various metrics, and time intervals.

**PERSONAL PROJECTS (in-progress) https://github.com/dsriggs1/Baseball\_Project**

**Fantasy Baseball: Using machine learning techniques to predict Major League Baseball player performance (GitHub:** [**https://github.com/dsriggs1/Baseball\_Project**](https://github.com/dsriggs1/Baseball_Project)**):**

* Designed object-oriented programming module in python based on the optimized Polars library for data exploration/transformations. Python module uses object-oriented programming techniques to group common classification and regression prediction algorithms to increase code re-usability and reduce repetition.
* Used MySQL database for data analysis and feature engineering of dataset with over 12 million observations and 200 columns from 1952-present; data is updated each season.
* Input features were created as statistical player performance inputs based on rolling time periods and segmented by batter vs pitcher matchup.

**Rcpp library: Using c++ to write more efficient R functions (GitHub:** [**https://github.com/dsriggs1/Rcpp-Library**](https://github.com/dsriggs1/Rcpp-Library)**):**

* Used Rcpp package to write optimized common rolling functions for data analysis. Used object-oriented programming principles like inheritance to reduce code repetition.