

# Malcolm Taylor

U.S. Citizen

120 Benchley Pl Apt 28D, Bronx, NY 10475 • (718)594-3385 • taylormc@bu.edu • <https://malctaylor15.github.io>

<b>EDUCATION</b>	<b>Boston University</b> , Questrom School of Business <i>M.S. Mathematical Finance</i> Jan 2017
	<b>University of Illinois at Urbana- Champaign</b> <i>B.S. Mechanical Engineering</i> May 2015
	New York Data Science Academy, Big Data and Hadoop 6 Week Workshop Aug 2017
<b>EXPERIENCE</b>	<b>Argus Information and Advisory Services</b> , White Plains, NY - Associate Modeling Team 2017 <ul style="list-style-type: none"><li>Created ensemble models to predict the amount an account would spend on a given card type with over 700 variables from different sources using SQL, SAS, and R</li><li>Used decision trees, linear regression and variable reduction to choose best model variables</li><li>Ensured model interpretability by checking for collinearity within variables and hypothesis tests for coefficient insignificance; validated models using SQL and SAS on out of sample data sets</li><li>Implemented Gradient Boosted Tree modeling process for variable reduction and robust, stable customer spend models using R and H2O modeling platform;</li><li>Automated document formulation from macro-enabled Excel scripts using Python</li></ul>
	<b>Charles River Development</b> , Scenario Analysis Business Analyst Intern 2016 <ul style="list-style-type: none"><li>Interpreted high level software requirements for developers by creating screen mockups to reduce product iterations and to gather team feedback rapidly</li><li>Designed scenarios to mimic economic shocks for the Solvency II European regulations using Charles River Investment Management platform</li><li>Created R Script and SQL queries to prototype mathematical calculation for implementation of factor models used to test java implementation</li><li>Conducted market research on competitor scenario analysis products to enhance internal awareness of industry trends</li></ul>
<b>PROJECTS</b>	<b>Wine Quality Bayesian Analysis (Python)</b> , Personal Project 2017 <ul style="list-style-type: none"><li>Analyzed dataset of 11 wine chemical components and the quality ratings for 1600 pairings</li><li>Use logistic regression and random forest to create a baseline for the model – found sugar and alcohol to be most important variables when selecting high quality from low quality wines</li><li>Used Bayesian logistic regression to analyze the effect of a prior on the analysis</li></ul>
	<b>Rental List Inquiries (R)</b> , Bronx, NY – Kaggle.com 2017 <ul style="list-style-type: none"><li>Predicted interest for listings given 13 categories of information about listings from apartment rental website RentalHop.com - data included apt description, price and other numeric fields</li><li>Used sentiment analysis, time date information, with gradient boosted tree algorithm to obtain test sample log-loss of 0.732; lowest log loss on Kaggle.com was 0.492</li><li>Used Random Search through parameters in gradient boosted tree using H2O platform for parallel computations; found optimal parameters to minimize log loss</li></ul>
	<b>Abalones Age Prediction (Python)</b> , Boston, MA – Personal Project 2016 <ul style="list-style-type: none"><li>Predicted age category of abalone sea creature using 4100 observations about the dimensions and various weights of the creature- 7 original variables in data set</li><li>Used KNN, logistic regression and random forest algorithms; found cross validation accuracy of 65% for most algorithms</li></ul>
	<b>UnderArmour Stock and Stephen Curry Regression (R)</b> , Personal Project 2016 <ul style="list-style-type: none"><li>Used OLS and PCA regression on Stephen Curry basketball performance data to find correlation with his sponsor UnderArmour's overnight stock returns; obtained adjusted <math>R^2</math> of 38.1%</li><li>Found field goals and assists were significant predictors of stock log returns in OLS regression</li></ul>
	<b>VIX Forecasting- Monte Carlo Bayesian Simulation (R)</b> , Boston University 2016 <ul style="list-style-type: none"><li>Predicted VIX price using an AR(3) model and 3 years of weekly historical data by sampling from the distribution of the model coefficients</li><li>Back tested model against VIX data starting from 1990; Found the model mean overestimated 83% of the historical returns</li></ul>
	<b>SKILLS</b> Python, R, SQL, Bayesian Inference, Deep Learning, Statistical Analysis, Regression Analysis
<b>INTERESTS</b>	Salsa Dancing, Sailing, Tennis