Zachary Apell

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Skills

Computer: Proficient in Python, R, SQL, C++, Experienced in SAS, Hadoop, Apache Spark, STAN, ReactJS, Javascript, MongoDB, Java
Python Libraries: Pandas, Numpy, Tensorflow, Scikit-learn, Keras, NLTK, PyTorch, Seaborn
Tools: Jupyter Notebook, Amazon AWS (Certified Cloud Practitioner), Tableau, Snowflake, Git, RStudio, Experienced with Excel, Microsoft Azure

Education

University of Michigan, Ann Arbor, Michigan May 2020
Bachelor of Science in Data Science

- 3.25/4.0 GPA
- Coursework: Machine Learning, Data Mining, Applied Regression Analysis, Bayesian Data Analysis, Web Systems, Database Management Systems, Honors Multivariable Calculus, Computer Vision

Work Experience

Freedom Mortgage **Mt. Laurel, NJ**
Data Engineer June 2020-Present

- Designed query to connect to Tableau in real time for a catalog of rule triggers to allow transparency for compliance, regulations, and operations business divisions
- Leveraged experience with Data Governance, ETL, and Marketing Analytics business groups to create SQL queries to join data from Marketing, Servicing, Originations, and Customer data sources for use in Lead Prioritization and Customer Satisfaction models

Wacker Chemical Corporation **Ann Arbor, MI**
Data Science Intern June 2019-August 2019

- Led Sales Forecasting project
  - Experimented with Long Short-Term Memory Recurrent Neural Networks, Support Vector Regression, and SARIMA models to forecast sales and order entries for business team using internal sales data and external economic factors
  - Achieved 87% accuracy on order entry forecast and 79% accuracy on sales forecast
  - Improved sales forecast by 10% less deviation in 2019
  - Prepared dashboards using Tableau for business teams by visualizing customer and product trends and insights
- Natural Language Processing Analysis
  - Used Twitter API to scrape tweets containing hashtags and mentions pertaining to specific customers and market segments
  - Used Microsoft Azure API and NLTK library to calculate sentiment analysis of tweets and extract key phrases from tweets
  - Presented to business team with insights about current and prospective customers to help sales and marketing teams

University of Michigan **Ann Arbor, MI**
Statistical Researcher January 2019-April 2019

- Designed a Random Forests model to create a concussion test that established a baseline score that determines if a player needs to undergo further testing based on the registered impact picked up by helmet sensors in high school football athletes
- Determined the most important features using the Random Forests model
- Predicted whether or not registered impacts would be a concussion using a Logistic Regression model

Personal Projects

Live Betting Database August 2020-Present

- Automated a process using Python and selenium remote webdriver to scrape dynamic data on an AWS EC2 instance to a PostgreSQL database hosted on an AWS RDS instance
- Utilized cronjobs and AWS cloudwatch to schedule bash scripts and lambda functions to run at specific times to minimize total cost

Predicting Diabetes in Patients November 2019-December 2019

- Developed Bayesian Logistic Regression model in STAN to predict if a person has Diabetes using biological data, such as BMI, Blood Pressure, and glucose levels with 70% accuracy
- Created logistic regression model in R to predict diabetes with 85% accuracy

NBA Salary Analysis November 2019-December 2019

- Compared performance of Linear Regression, Principle Component Regression, KNN Regression, and Ridge and LASSO regressions in R on NBA salaries for the 2017-18 season using a wide range of advanced analytics
- Predicted future salaries of players on their rookie deals in 2017-18 with median error of $305,479

Spotify Analysis August 2019-January 2020

- Clustered saved songs based on features grabbed from Spotify API to determine similarly structured songs between genres
- Visualized the audio features by building a Tableau dashboard