

# ALEXIS CASAS

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## EDUCATION

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**University of San Francisco, CA**

*August 2016 - Graduation May 2020*

BS in *Physics*

Cumulative GPA: 3.52

Minors in *Business Analytics & Physics Engineering*

Honors: Sigma Pi Sigma Member, Clare Boothe Luce Scholar, Women in Physics Communications Chair

## CAREER OBJECTIVE

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Hardworking and dependable individual, with a profound understanding of mathematics and genuine passion to learn. Currently seeking to apply problem solving and analytical abilities to transform data into business insights.

## PROJECTS

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### **Covid-19 Predictions and Time Series Forecasting**

Investigated Random Forest's power over Decision Tree's while predicting who is most likely to be hospitalized for Covid-19. Employed Feature Ranking and examined bias through ROC Analysis and K-Fold Cross Validation. Found ARIMA to outperform Random Forest for time series forecasting the number of cases in the US.

### **Predicting Restaurant Reviews**

Conducted sentiment analysis using NLP to classify customer reviews into positive or negative. Performed SVM, KNN, and Logistic Regression to calculate the probability of receiving a recommendation from each user. ROC analysis provided confidence that SVM outperformed the others with a resulting 79.5% prediction accuracy.

### **Improving Bzzt Podtaxi Operations**

Organized, cleansed, and merged large geographical data sets in R. Then, applied K-Means Clustering to identify different boroughs within Stockholm, Sweden and determine optimal Podtaxi starting points.

### **Coffee and Tea Production Analysis**

Created and presented Tableau dashboards identifying which markets caused the largest dip in revenue. Some story-telling visualizations include: Pareto Graphs, Waterfall Charts, and Animated Time Series.

### **Chinook Music Label Analysis**

Wrote complex SQL queries to confidently answer common business questions. Generated python visualizations via Jupyter Notebook to illustrate important summary statistics.

## SKILLS

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**Programming:** SQL, R, Python, Tableau, LaTeX, Jupyter Notebook, Microsoft Excel

**Technical:** Problem Solving, Data Visualization, Data Cleansing, Predictive Modeling, Classification, Supervised and Unsupervised Machine Learning, Regression, Random Forest, SVM, KNN

**Certificates:** Intermediate SQL for Data Engineering, APIs and Web scraping, Intermediate Python

## RELEVANT EXPERIENCE

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### **Business Analytics Department, University of San Francisco**

*January 2020- May 2020*

*Teaching Assistant: Advanced Business Analytics in R*

- Guest lectured on using Google APIs as a data visualization technique for K-Means Clustering in R.
- Improved students' understanding in machine learning algorithms while enhancing their critical thinking techniques.
- Thoughtfully crafted homework solutions, carefully graded student work and provided constructive critical feedback.
- Enthusiastically investigated machine learning techniques and problems that resulted in new lecture material.

### **Business Analytics Department, University of San Francisco**

*August 2019- May 2020*

*Research Assistant*

- Achieved and exceeded weekly data science goals set by research advisor while working on large software projects.
- Organized public transit data into data frames and worked with Google APIs to generate transit models in Python.
- Read a variety of machine learning papers and communicated key points in an understandable manner.
- Collaborated with professors to design a presentation on data valuation for upcoming academic conferences.
- Assisted in drafting papers for publication via LaTeX under time constraints.

### **Physics and Astronomy Department, University of San Francisco**

*January 2019- March 2020*

*Physics and Math Tutor*

- Conducted weekly tutoring sessions for Methods of Mathematical Physics and Introduction to Physics.
- Transformed students' understanding of material by developing and enhancing their analytical techniques.
- Analyzed and reviewed department lecture material, homework solutions and exams before released to students.