

# Seth Arreola

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## EDUCATION

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### California State University of Fullerton

*Masters of Science in Statistics*

Fullerton, CA

Aug. 2021 – Present

### California State University of Fullerton

*Bachelors of Arts in Mathematics*

Fullerton, CA

Aug. 2018 – Dec. 2020

### Crafton Hills College

*Associates in Science Degrees*

Yucaipa, CA

Aug. 2014 – May 2018

- Associates in Science, Mathematics
- Associates in Science, Economics

## EXPERIENCE

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### Undergraduate Research Assistant

CSUF

Aug. 2020 – Dec. 2020

Fullerton, CA

- Statistically model COVID-19 cases via mobility data scrapped from Google and Apple Maps using R
- Explore and visualize transmission rates using R, rShiny, ggplot
- Present findings to the National Conference of Undergraduate Research

### DeLand Research Assistant

CSUF

Jan. 2020 – Aug. 2020

Fullerton, CA

#### [Portfolio-page](#)

- Assisted with creating novel methodologies for estimation and convergence of probability distributions
- Worked in conjunction with statisticians from CSUF, University of Waterloo, and geologists from CSUF, and UCLA to estimate rainfall hiatus at Barley Lake as a consequent of climate
- Methodologies and results were documented and currently the preprint is submitted to the Journal of Environmental Statistics

### Mathematics/Statistics/and R-programming Tutor

San-Bernardino and Orange Counties

Dec. 2020 – Present

CA

- Assisted and tutored Graduate, Undergraduate, and High school students in a range of mathematic and statistic topics
- Statistics topics include: probability theory, probability distribution parameter estimation, maximum likelihood estimation, Bayesian estimation, linear and logistic regression, hypothesis testing, hierarchical clustering, model-based clustering, decision trees, bootstrapping and bagging, random forests, and neural networks
- Mathematics topics include: Algebra, Trigonometry, Calculus, Statistics, Linear-Algebra
- Fostered an approachable and engaging learning environment in-person and online

## PROJECTS

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### A Few Strategies for the Statistical Modeling of the COVID-19 Pandemic

[Portfolio-page](#) [GitHub-page](#)

Aug. 2020 – May 2021

- In this project a series of robust statistical models were applied to COVID-19 data in order to model the transmission of the virus, along with gaining insight into the nature of transmission effectiveness among differing counties with respect to mobility data. Mobility data included Apple and Google mobility/transit data (i.e. Apple and Google Maps), which was used as initial input features for the predictive models. Some supervised learning models utilized include Neural Networks, Logistic Regression, and K-Nearest Neighbors. Moreover a class of models known as Generalized Linear Auto-Regressive Moving-Average (GLARMA) was also applied to build a predictive engine for the same purpose. Some of the models attained more than 90-percent accuracy and revealed that the rate of the spread can be significantly slower in more prosperous counties.

## TECHNICAL SKILLS

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**Languages:** R, SQL, MatLab, C/C++, LaTeX

**Libraries:** All packages included in tidyverse ecosystem, ggplot2, shiny, kitr, Caret

**Additionally:** git, tableau, Microsoft(Excel, PowerPoint, and Word)