

# Samuel Silva

## Objective

Employment involving data science, research, quality control, statistical analysis and modeling in business and marketing, entertainment and leisure, education, medical sciences, or engineering.

## Education

### University of Redlands

Graduated April 2020

- Bachelor of Arts (*focus: data science; major: physics; minor: math; GPA: 3.519*)
- Thesis: *Modeling and Constructing a Chaotic Circuit*
- Summary of courses related to emphasis, major, and minor

Statistical Analysis and Modeling	Physics	Math
Statistical Methods (Behavioral Sciences)	Electronics	Calculus I, II, III
Statistical Analysis and Mapping	Advanced Lab	Vector Calculus
Statistical Thermodynamics	Particle Physics	Linear Algebra
Mathematical Statistics	Classical Mechanics	Differential Equations
Probability	Electricity and Magnetism	Partial Differential Equations
Data Science	Quantum Mechanics	
Machine Learning		

### Redlands High School

Graduated June 2016

## Statistical and Computer Skills Related to Analysis, Modeling, and Engineering

- **RStudio (R), IBM SPSS, and Stata statistical analysis software:** data entry, manipulation, and visualization; splicing and stitching together datasets, dummy variable coding, outlier detection and cleaning protocols; descriptive statistics, frequency distributions, *t*-tests, ANOVAs, multiple and curvilinear regression, correlation, chi-square, non-parametric analyses, mapping, time series. R packages include ggplot2, dplyr tidyverse, stringr, (CRAN library).
- **Python:** machine learning and modeling using Scikit, Numpy, Pandas, TensorFlow, Keras for regressions (linear, logistic, ridge, lasso, elastic net), SVM, k-nearest neighbors, clustering, neural networks (CNN, DNN), hyperparameter tuning and validation (cross-validation, ROC curves, and learning curves)
- **LabVIEW engineering programming language:** creating programs for microcontrollers and to record voltages, temperature, and airflow
- **Microsoft Office:** Excel (summary statistics, filtering and generating lists, tables, graphs), PowerPoint, Word
- **Java:** programming language (basic level)
- **ArcGIS Online:** data representation and visualization (basic level)

## Work Experience at University of Redlands

### Physics Research (Nonlinear and chaotic analysis)

Summer 2019 (40 hr/week)

- Building and testing chaotic circuits
- Programming Arduino and other microcontrollers
- Programming in Python (modeling, simulations, Fourier analysis, return maps, phase portraits, Lyapunov exponents, bifurcation diagrams)
- Use of specialized electronic equipment (spectroscopy equipment, spectrum analyzers, and lock-in amplifiers)
- Writing about and presenting results of research to technical and non-technical audiences
- Participating in weekly research colloquia
- Supervisor: Dr. Alan DeWeerd

### Economics Data Science Research Assistant

Fall 2019 – Spring 2020

- Large-scale demographic data cleaning (stitching misshaped datasets and creating dummy and trigger variables) and statistical analysis using R
- Supervisor: Dr. Jaime Meza-Cordero

### **Physics Tutor and Grader**

**Fall 2019 – Spring 2020**

- Teaching and helping students to learn about introductory classical mechanics, electricity and magnetism, quantum physics and thermodynamics, and advanced electronics and advanced thermodynamics, calculus I-III, and differential equations
- Grading assignments for introductory physics classes
- Supervisors: Dr. Martín Hoecker-Martinez (tutoring); Dr. Alan DeWeerd (grading)

### **Student Office Assistant**

#### **Office of Graduate and Professional Enrollment**

**Summers 2017, 2018 (40 hr/week)**

- Scanning and managing hundreds of confidential applications and supporting documents
- Using customer-relationship management software (Colleague, Slate, and other Datatel/Ellucian systems) to track university-business relations
- Updating web fronts and online application processes to reflect changes to university programs
- Helping to maintain the scheduling system used by applicants to meet with academic advisors
- Using Microsoft Office to create schedules for office employees, mailing labels, and database lists
- Supervisor: Mai Vang

### **Service and Extracurricular Activities**

- President: University of Redlands Physics Club 2019-2020
- Community Service: Kimberly Crest House and Gardens, May 2019
- Musician: Percussion in middle and high school ensembles and bands, September 2009 – June 2016

### **Honors and Scholarships**

- David J. Miller Award (awarded to the outstanding senior in physics, April 2020)
- Robert D. Engel Award (awarded to outstanding senior in the sciences, April 2020)
- Ifft Endowed Research Fund (for conducting physics research, Summer 2019)
- Member of Pi Mu Epsilon (national mathematics honor society)
- Member of the National Society of Leadership and Success
- University of Redlands Achievement Award (September 2016 to April 2020, \$24,000 per year)
- Dean's Honor List (Fall 2016, 2017, 2019 and Spring 2020, University of Redlands)

### **References**

Upon Request