

# Javier Zapata

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**OBJECTIVE:** Finding a full-time position to develop data-driven solutions. Available on September 2020.

## Education

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- **University of California, Santa Barbara** **Santa Barbara, CA**  
*Ph.D. (c) & M.A. in Statistics and Applied Probability (GPA: 3.95)* *Sep 2015 - (Sep 2020)*  
**Doctoral Research:** High-Dimensional Functional Graphical Models for Multivariate Gaussian Processes  
Developed a scalable model to learn partial correlations of a high-dimensional Gaussian process. Areas of application include neuroimaging, portfolio optimization and covariance estimation. Advisor: Professor Sang-Yun Oh
- **University of Chile** **Santiago, CHILE**  
*Professional Degree & B.Eng.Sc. in Industrial Engineering (GPA 4.00)* *2005-2010*

## Experience

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- **Western Asset Management** **Pasadena, CA**  
*Quantitative Analyst Intern* *Jun 2019 - Aug 2019*  
Designed and implemented an anomaly detection method for fixed-income risk analytics. The approach combines machine learning with price sensitivity equations, and includes interactive visualizations for results interpretability. The solution expands and refines the current rule-based practices used for over 120K bonds in 33 currencies.
- **SimpliRoute** **Mountain View, CA**  
*Data Science Intern* *Jul 2017 - Sep 2017*  
Implemented a machine learning predictor model for logistics. The solution integrates historical mobile GPS and delivery schedule data to improve the company's analytics for multi-stop delivery route plans.
- **Ministry of Finance, Chilean Sovereign Wealth Fund** **Santiago, CHILE**  
*Quantitative Researcher* *Mar 2012 - Dec 2014*  
Performed several studies for the Financial Committee of the funds to improve the investment policy in terms of risk metrics and rebalancing guidelines. Exposure to major liquid asset classes including sovereign and investment grade bonds, as well as equities. Enhanced productivity by developing a SQL based Excel automated reporting system.
- **Fischer & Zabala, Asset Management** **Santiago, CHILE**  
*Quantitative Financial Analyst* *Mar 2011 - Dec 2011*  
Developed a credit risk model for a financial mortgage-backed security deal for the Chilean pension funds.
- **University of California, Santa Barbara** **Santa Barbara, CA**  
*Teaching Assistant & R\Shiny Web Developer* *Sep 2015 - Current*  
Teaching Assistant for: Stochastic Processes, Time Series, Big Data Analytics, Data Science, and Statistical Machine Learning.  
Developed a repository of interactive web-based learning applications for probability and statistics undergraduate courses.

## Publications

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- J. Zapata, S. Oh & A. Petersen. Direct Estimation of Differential Functional Gaussian Graphical Models. (*in progress*)
- J. Zapata, S. Oh & A. Petersen. Partial Separability and Functional Graphical Models for Multivariate Gaussian Processes. *Journal of the American Statistical Association* (Currently Under Review)
- J. Zapata. **fgm** R-package for Partial Separability and Functional Graphical Models for Multivariate Gaussian Processes (2019)
- J. Zapata & A. Cifuentes. On the Stability of Synthetic CDO Credit Ratings. *International Finance*, Vol. 19, No. 2, June, 2016.

## Skills

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- **Scientific Computing:** Python & R. Python Libraries: Pandas, NumPy, SciPy, Scikit-Learn, Keras, h20.
- **Big Data Computing & Databases:** Apache Spark, MapReduce, SQL
- **Web Development & Visualization Libraries:** R\Shiny, Plotly, HTML, Ggplot2 and Matplotlib
- **Languages:** English and Spanish.
- **Personal Interests:** Weightlifting, hiking and cooking.