CESAR ACOSTA

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More than 10 years of experience analyzing highly complex data, building advanced data mining models to predict market outcomes useful to improve decision making in Marketing Analytics, Financial investing, and business operations (supply chain analytics, logistics). Outstanding skills to finding data insights for problem solving and process optimization.

EDUCATION

Ph.D. Statistics, The University of Texas at Dallas,

EXPERIENCE

- Data Analytics Consultant *2013 - present*
- USC, Viterbi School of Engineering, MS Analytics, program advisor and instructor *2018 - 2023-1*
- USC, Viterbi School of Engineering, MS Financial Engineering, instructor *2014 - 2018*

Ample experience in optimizing and applying Machine Learning to solve real-world problems through the use of advanced statistical analysis to build prediction and classification models in applications such as Marketing Research, Portfolio Optimization, Volatility Forecasting, and Automated trading. Experience using Deep learning, Ensemble Methods, Gradient boosting, and other classification methods (KNN, Discriminant Analysis), Regression methods (Ridge, LASSO, Logistic, Multinomial regression), and Clustering methods (PCA, K-means, Hierarchical clustering).

AWARDS

- 2018-2019 Outstanding Teacher of the Year, USC Department of Industrial and Systems Engineering
- 2018, Best FE Track Paper Award. Castro R., Huang S., Liu J., Blay R., Acosta-Mejia C. *Mixtures-based Value at Risk Estimates of Financial Stocks*. Third North American International Conference on Industrial Engineering and Operations Management, IEOM Society International.

SKILLS

- Predictive Analytics: Machine Learning - Python, *R*
- Prescriptive Analytics: Reinforcement Learning, Python
- Statistical Learning Modeling - *R*
- Databases: MySQL, Apache Hadoop, Spark
- Data Visualization: Tableau, *R* ggmap, Excel BI tools
- Other: C^{++}, Matlab, Advanced MS Excel

TEACHING

Graduate courses offered with average teaching ratings (in parentheses)

- ISE 529 Predictive Analytics, MS Analytics, 2022, USC (4.51/5.00)
- ISE 535 Data Mining, MS Analytics, 2022, USC (4.55/5.00)
- ISE 580 Prescriptive Analytics with Simulation, MS Analytics, 2022, USC (4.50/5.00)

AUTHORED BOOK

Financial Derivatives, 2018. My textbook for a course in financial derivatives, portfolio optimization, and hedging. The book includes examples and exercises in *R* to construct optimal portfolios, to estimate Value at Risk, to price European and American options, among other applications. It also introduces Stochastic processes and stochastic calculus for the Black and Scholes formulas, and covers Monte Carlo simulation of Brownian motion to estimate the price of some exotic options. It shows how to use libraries `RQuantlib, Rmetrics, rugarch, fOptions, fExoticOptions` for financial modeling.

INVITED SPEAKER

- SatRday LA 2019 *Multiple Response Regression Models*. Los Angeles *R* Users Group. April 2019, Los Angeles, CA. `https://losangeles2019.satrdays.org/`
- IDEAS 2018 Conference on AI. *Is the Best Predictor actually the best?*. International Data Engineering and Science Association. October 2018, Los Angeles, CA. `www.ideassn.org/socal-2018/`