**Statement of Purpose - Stanford University - Master in Statistics**Dan Zylberglejd

In a rapidly developing world, with an increasing amount of data and computational efficiency, statistics arises as a key piece in the technological progress. I became passionate for this fascinating and powerful science from both my academic background and practical experience. Completing my first degree in industrial engineering while interning in several quantitative positions has adequately prepared me for my next endeavor. I believe that the Master's program in statistics offered by Stanford University is a perfect fit for me in my pursuit for a deeper experience with graduate-level academic research.

My passion for mathematics started early, when I participated in the Brazilian National High School Math Olympiads. Solving complex problems with the most brilliant minds in the country inspired me to master this field, increasing my motivation to delve deeper into my studies and become one of the best contestants in Brazil. I was not only awarded several medals in those competitions, but also placed 1st in the college entrance exams for the Pontifical Catholic University of Rio de Janeiro (PUC- Rio) and the Federal University in Rio de Janeiro (UFRJ), as well as 22nd nationwide in the ENEM (Brazilian SAT equivalent).

At PUC, by choosing IEOR as a major I had great exposure to the field of statistics, so I opted for a minor in risk analysis (PUC's statistics minor equivalent). I took enriching courses such as "Computational Intelligence", "Time Series", "Regression Models" and "Markov Stochastic Processes". Every semester, I received awards for the top ranked GPAs, which allowed me to become a teaching assistant in Linear Algebra and later in Honors Calculus. I also earned a year-long scholarship to study abroad at UC Berkeley, where I had a life changing experience with its enhancing academic environment and cultural diversity.

Interning at companies while studying in college was a challenging, but fruitful experience, given how I always focused on my academic interests to guide me through quantitative-related jobs. I first joined Kadima Asset Management as a quantitative researcher, where I experienced the power of some statistical methods such as Kalman filtering and cluster analysis. Not satisfied by testing the existing models, I became enthralled with the idea of building my own. After studying, backtesting and coding, I could design a successful mean-reversion system. After spending one academic year in Berkeley, I became a risk summer analyst at Citigroup NY. In order to analyze interest rates’ impact on mortgage pre-payments, I built a nonlinear regression and programmed my own optimizer, avoiding parameters’ fast convergence to unsatisfactory local minimums. When I returned to Brazil, I joined another quant team - Bozano Investments. Here, I developed an algorithm to obtain the 1st PCA component quickly in high dimensions, implemented co-integration estimations and analyzed stochastic calculus models. Then I was hired by a larger firm, Vinci Partners, where I am currently working as an analyst. I am really grateful for receiving return offers from all of those enterprises, and for the different experiences rendered by each of them.

Another aspect I have always devoted myself to is social work. With my passion for teaching, I have constantly tried to contribute to society by mentoring and instructing. Besides frequent visits to orphanages and nursing homes in Rio, I have also joined the YSP mentoring program in Berkeley, lectured for needy students in Rio and developed "Steps", a project to attract more PUC students to teach as volunteers.

I am now ready to enter graduate school. I am excited to learn from a wide array of topics, with a focus on machine learning, econometrics, Bayesian and high- dimensional statistics. I am interested in both theory and application, especially the intersections between statistics, computer and social sciences. There is no better place than Stanford to assist me in taking this step, not only because of its superb reputation, but also because I truly identify myself with its program.

I was first introduced to Stanford’s faculty during my time at Bozano Investments when, oriented by my Professor Alvaro Veiga, I applied the LASSO method to price forecasting. Seeking to understand its concepts better, I found myself reading Professor Robert Tibshirani's paper “Regression shrinkage and selection via the lasso” and was very impressed. Encouraged to learn more, I went on and read other publications by Stanford Professors, such as “Least Angle Regression”, and later “Option Prices and Pricing Theory: Combining Financial Mathematics with Statistical Modeling” by Tze Leung Lai, which made me even more motivated to pursue a degree in Stanford.

Within the Master's program, I seek to reinforce my conceptual bedrock, get more contact with research, and expand my professional network. I want to learn, produce and share new ideas. In the long run, this would provide an excellent transition into an intended Ph.D., where I would be better enabled to link theory with practice, raising relevant questions and using cutting-edge technology to help solving them. I believe I have much to offer Stanford with my diverse background and passion for statistics. At the same time, I am confident that at Stanford I will have an exceptional academic experience, leveraging my potential and opening the door to a promising future.

Sincerely,

Dan Zylberglejd