Rafael Lacerda

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Career Objective

Adaptable professional with ~5 years of experience and proven knowledge in data science, natural language processing and machine learning engineering. Seeking opportunities to further develop my craft.

Education

MSc. in Applied Computing *Sep 2016 — Dec 2017*

University of Toronto, *Department of Computer Science*

- Courses of note: Natural Language Processing, Computational Neuroscience, Probabilistic Learning and Reasoning.
- Recipient of 30k Mitacs scholarship (2x terms).

BSc. in Economics *Aug 2011 — Jul 2014*

Universidade Presbiteriana Mackenzie, *Department of Applied Social Sciences*

- Previously a student of Computer Science at the same university:
  - Transitioned into Economics to focus on modeling human activity. Since then I have used my CS skills as tools to assist in modeling and automation.
  - Completed the first three semesters of CS fundamentals. *Courses of note*: Optimization Algorithms, Data Structures, Linear Algebra, Statistics, Calculus, C Programming.

Work Experience

Machine Learning Engineer *May 2017 — Feb 2019*

Ross Intelligence Inc., Toronto, ON

- Developed a state-of-the-art legal research system that surpassed IBM Watson's performance, leveraging deep learning and NLP.
- Coordinated new research that further improved the research system, by creating specialized models to extract domain knowledge features.
- Involved in all stages of Research, Development and Deployment in a distributed architecture.
- Developed statistical tests with human assessments to ensure model superiority before deployment into production.
- Speeding up models for production by using caching and precomputation.
- Used Python, Tensorflow, Keras, Solr/Lucene, Pandas, Spacy, NLTK, Scikit-Learn, MongoDB, Redis, Docker, Travis CI, Kubernetes, AWS.

Data Analyst, Treasury *Aug 2014 — April 2016*

OR Investimentos SA, São Paulo, Brazil

- Developed Business Intelligence systems to monitor aggregate treasury risk daily. Used Python and VBA.
- Developed regression models to estimate bank risk when CDS spreads were unavailable.
- Created a system to manage 300+ regional branches' bank balances, saving over 3MM USD monthly by optimizing cash efficiency. Used Python and VBA.
- Created a task manager based on Directed Acyclical Graphs (DAGs) to assist in the 4h computation of our monthly reports, allowing resume on failed tasks, greatly reducing analyst hours. Used Python and VBA.

Head of Customer Service *Jan 2013 — Nov 2013*

Zocprint LTDA, São Paulo, Brazil

- Developed and grew a new data-driven customer service department within the organization.
- Implemented data collection and processes to automatically close the feedback loop to the operations department.
- Created tools for the CS agents to monitor production and shipping status of orders. Used Python, wxWidgets, SQL, VBA.
- Developed a supply/demand model to predict when new hires were necessary a month in advance.
- Hired and managed up to 9 CS agents.

Other Projects

- Computational graph for video filters. Used OpenCV, Python, Numpy (2019)
- Emotion based movie recommendation system. Used Python, BeautifulSoup, EmoLex, Numpy (2016)
- BSc. Economics thesis on a time series model to measure the effects of uncertainty brought upon by Federal intervention on oil policy. Used the Gretl stats package for the regression model (2014).
- Stock recommendation system using Modern Portfolio Theory to yield the highest possible rate of return given a preferred level of risk. Used Python, Pandas, Numpy (2014).
- 6 month internship in real estate management (OR Investimentos) on financial modeling. Automated processes using VBA (2014).
- 6 month internship at a hedge fund (Kondor Invest, risk office) clearing daily trades and automating processes. Used Python, SQL and VBA (2012).

Technical Skills

- **Programming:** Python, R, Tensorflow, Keras, Numpy, Pandas, Scikit-learn, Spacy, NLTK, Matplotlib.
- **Software Engineering:** SQL, NoSQL, Solr, Redis, Docker, Travis CI, REST APIs, AWS ecosystem.
- **Machine Learning:** Regression, Classification, Clustering, Dimensionality Reduction, Model Validation, Model Selection.
- **Deep Learning:** NN, CNN, RNN, LSTM, GRU, Autoencoders.
- **Natural Language Processing:** Embeddings, Information Retrieval, Natural Language Understanding, Question-Answering, Learning to Rank, Summarization.