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. I aim to leverage my skills and experience to fulfill your company's data science and machine learning needs.

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.
- 8 month internship at a legal tech company (Ross Intelligence) developing a legal research system to surpass IBM Watson using the latest advances in Deep Learning and NLP.
- 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.
- Final 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.
- 6 month internship at a hedge fund (Kondor Invest, risk office) clearing daily trades and automating processes. Used Python, SQL and VBA.
- 6 month internship in real estate management (OR Investimentos) on financial modeling. Automated processes using VBA.

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, Mongo DB, Redis, Docker, Travis CI, Kubernetes, AWS.

Treasury Analytics, 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, cutting down on analyst hours, allowing resume on failed tasks. 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.

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, Transformers, Autoencoders.
- **Natural Language Processing:** Embeddings, Information Retrieval, Natural Language Understanding, Question-Answering, Learning to Rank, Summarization.