

Felipe Maia Polo

São Paulo – São Paulo – Brazil

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Education

For meaningful coursework list click *here*.

- **University of São Paulo** **São Paulo, Brazil**
MSc in Statistics,
Equivalent GPA=4.00/4.00
2019–Now
- **University of São Paulo** **Ribeirão Preto, Brazil**
BS in Economics (Best Student of Cohort - 1st out of 49),
GPA=8.8/10
2014–2018
- **University of Tokyo** **Tokyo, Japan**
Exchange Student, Brazilian Government Scholarship
Equivalent GPA=4.00/4.00
September 2017–January 2018

Research

Conferences

- **Practical Machine Learning For Developing Countries Workshop @ ICLR 2020 (Oral Presentation);**
- **LatinX in AI Workshop @ ICML 2020 (Poster presentation);**
- **Brazilian Meeting of Bayesian Statistics (EBEB) 2020 (Poster presentation);**
 - The EBEB is held every two years and is the most important Bayesian meeting in Brazil.
- **São Paulo School of Advanced Science: Learning from Data 2019 (Oral presentation);**
 - The event gathered researchers from important universities worldwide at the University of São Paulo for two weeks to discuss about Data Science, Machine Learning and Statistics.

Master thesis (Ongoing project)

- **"Covariate Shift Adaptation in High-Dimensional and Divergent Distributions"**
 - Supervised by professor Renato Vicente;
 - The divergence (e.g. KL, Renye) between two distributions monotonically increases with the number of variables and that fact can compromise Covariate Shift adaptation, due to low effective sample size and difficulties of estimating the weighting function;
 - The objective of this work is to propose an approach in which Sufficient Dimension Reduction techniques are used to select a small group of sufficient variables, thus making adaptation easier;
 - The selection of variables provides an interpretable approach in contrast to ordinary dimension reduction.
- **"Covariate Shift Adaptation for Credit Scoring Using High-Dimensional Data"**
 - Supervised by professor Renato Vicente;
 - The objective of this work is to apply new methodology to solve a challenging real-world problem, which is to perform Covariate Shift adaptation in highly dimensional and divergent distributions to obtain good generalization of credit scoring in different populations;

Papers.....

- **Polo, F. M., Ciochetti, I., Bertolo, E. (2020). Predicting Legal Proceedings Status: an Approach Based on Sequential Text Data. arXiv preprint arXiv:2003.11561. (Submitted to publication)**
 - Presented at *PML4DC Workshop @ ICLR 2020 (Oral presentation)*, *LatinX in AI Workshop @ ICML 2020 (Poster presentation)*, and *São Paulo School of Advanced Science: Learning from Data 2019 (Oral presentation)*;
 - The objective of this work was to develop an interpretable model to classify sequences of legal texts;
 - The developed model was a combination of CNNs and RNNs, could be interpreted and had a good predictive performance compared to benchmarks;
 - The implementation was made in Python (Keras, PyTorch, Gensim, and Scikit-Learn).
- **Polo, F. M. (2020). Skills to not fall behind in school. arXiv preprint arXiv:2001.10519.**
 - Presented at *Brazilian Meeting of Bayesian Statistics 2020 (Poster presentation)*;
 - The objective of this work was to identify which were the most important skills students can develop in school;
 - The core analysis was made using Bayesian Logistic Regression and tailored Hypothesis Testing;
 - The implementation was made in R (RStan).

Book chapters.....

- **Polo, F. M., Santos, D. D. D. (2017). Childhood Education: Recent advances and challenges in a near future in Brazil. Ciência pela Educação: Uma Ponte Entre dois Mundos (pp. 73-96).**
 - Many Brazilian experts from different backgrounds (e.g. Economics, Public Policy, Neuroscience, Computer Science) were invited to contribute to the book;
 - The book is one of the most important books in the area of science and education in Brazil at least regarding the last decades - in 2019, the book was a finalist in the most important Brazilian prize for books, the prize "Jabuti".

Bachelor thesis.....

- **"The importance of the social-emotional profiles of students in the prediction of their performance in school: a clustering approach"**
 - Supervised by professor Daniel Domingues dos Santos;
 - The objective of this work was to explore the relationship between the social-emotional profile of students and how well they do in school;
 - The analysis gathered clustering, classification, and regression methods;
 - The implementation was made in R.

Employment.....

- **Advanced Institute for Artificial Intelligence (AI2)** **São Paulo, Brazil**
Research Assistant *March 2020–Now*
 - From AI2 website¹: "The Advanced Institute for Artificial Intelligence is a consortium of outstanding researchers in different areas of AI aiming to tackle socially relevant problems with financial support mainly from the private sector."
 - Engaged in weekly meetings with professor Renato Vicente (supervisor), post-docs researchers, and Serasa Experian data scientists to discuss the progress of our research agenda regarding subjects as Domain Adaptation and Causal Inference;
- **Tikal Tech** **São Paulo, Brazil**
Data Science Consultant *January 2019–Now*
 - Tikal Tech is one of the most important legal/law techs in Brazil;
 - Led the development of Machine Learning and Natural Language Processing algorithms applied in the legal area for document classification purpose;
 - Developed statistical analysis to optimize clients' portfolios.
- **Neuron - Data Science and Artificial Intelligence** **São Paulo, Brazil**
Founder, Former President and Advisor *January 2018–Now*
 - Founded and led the group to be a reference as a bridge between Academia and Industry;
 - Organized seminars and workshops with important researchers and tech entrepreneurs;
 - Produced Data Science materials in Portuguese.

<https://advancedinstitute.ai/>

- **Social Economics Lab (LEPES)** **Ribeirão Preto, Brazil**
Analyst *March 2014–January 2017*
 - LEPES is a research lab located at the University of São Paulo which the main objective is to assist educational public policy in Brazil using data analysis;
 - Performed statistical analysis using statistical software like R and Stata;
 - Produced reports for clients, great part of them linked to the public policy area.
- **Insper** **São Paulo, Brazil**
Summer job *January 2016–February 2016*
 - Worked with Ricardo Paes de Barros and his team at Insper, an economics and business top school in Brazil;
 - Automated the search and storage of bibliographic references using VBA and Excel;
 - Produced surveys within the literature of public policy evaluation.

Awards and Honors

- **Runner-up in "NLP Hackathon Dotz" (2020)**
 - Developed an ensemble algorithm using BERT and SVM/TFIDF to classify products according to their descriptions;
 - Prize: US\$3000 credit in Google Cloud + R\$2000 (Equivalent to 2 monthly minimum wages).
- **Best Economics Student Certificate - University of São Paulo (2018);**
- **Best Economics Students in the State of São Paulo Certificate - Regional Economics Council of State of São Paulo (2018);**
- **Champion team in the Economics Olympiad of São Paulo (2018)**
 - Prize: R\$4,000 (Equivalent to 4 monthly minimum wages).
- **Champion Team of 'Desafio Claro' @ Hackathon Serasa EjHack Experiance JAM5 (2018)**
 - Developed a platform for data analytics and optimization of Claro's operations;
 - Prize: R\$10,000 (Equivalent to 10 monthly minimum wages).
- **Participation in the Hult Prize Regional Finals (2018)**
 - The Hult Prize is an international championship about technology and entrepreneurship applied to solve social issues in developing countries;
 - My team was selected among thousands of teams worldwide to compete in the Mexico City Hult Prize Regional Finals.

Scholarships

- **Master's Scholarship (2019-2020) (Need/Merit-Based)**
 - Financial aid paid by the "Coordination for Higher Education Staff Development (CAPES)", the main public research agency in Brazil.
- **Teaching Assistant (8/2019-12/2019) (Merit-Based)**
- **Exchange Scholarship (9/2017-2/2018) (Merit-Based)**
 - Ranked among the top three students in the whole University of São Paulo to receive exchange scholarship from the University of São Paulo International Agency (AUCANI).
- **Research Scholarship (11/2015-11/2016) (Merit-Based)**
 - Scholarship paid by the "Research Foundation of Management, Accounting and Economics (FUNDACE)" for the development of my first independent research at the "Social Economics Lab".

Presentations and Educational Activities

Invited Talks and Panels.....

- **Panel: "Natural Language Processing and Text Mining" (2020)**

- Discussed about NLP and Text Mining with BCG Gamma, Info Price and Cloudwalk Data Scientists and Executives. Event organized by Turing Group from University of São Paulo.

- **Talk: "Covariate Shift Adaptation" at Serasa Experian Journal Club (2019)**

- Invited for an academic internal presentation to the data scientists of the company.

- **Talk: "Classification of Sequences of Texts" at Serasa Experian DataLab NLP Meetup (2019)**

- Invited to present my work in one of the most important meetups in São Paulo.

- **Panel: "Artificial Intelligence and Data Science" at the University of São Paulo Business Week in Ribeirão Preto (2018)**

- Discussed about AI and Data Science with Professor Evandro Saidel (USP) and entrepreneur Celso Azevedo (Data H).

Courses and Workshops.....

- **"Introduction to Classification" at Neuron's Machine Learning Online Bootcamp 2020**

- Presented live for more than 100 people who were participants in the Bootcamp;
- Among the audience there were both people from Industry and Academia.

- **"Introduction to Data Science" at Big Data Brasil Day 2019**

- Invited to offer one of the four courses at a major Data Science event in Brazil;
- Taught for 16 hours to more than 60 people.

- **"Calculus"**

- Produced more than 100 videos on Limits, Derivatives and Integrals;
- More than 75,000 visualizations;
- The whole Calculus course can be found on YouTube and one of my videos can be found *here*.

Teaching Assistant.....

- **Introduction to Probability and Statistics II (2019);**

- **Introduction to Statistical Inference (2018);**

- **Introduction to Probability and Statistics I (2017);**

- **Integral and Differential Calculus II (2015);**

- **Integral and Differential Calculus I (2015).**

Event Organizer

- **Data Science Talks Meetup (2019)**

- Led the organization of two editions of the data science meetup 'Data Science Talks', which is an unique initiative in the University of São Paulo;

- **São Paulo School of Advanced Science - Learning From Data (2019)**

- Organization committee of the 'São Paulo School of Advanced Science - Learning From Data' at the University of São Paulo;
- The event gathered researchers from important universities worldwide for two weeks to discuss about Data Science, Machine Learning and Statistics.

- **Data Science Day (2018)**

- Led the organization of the first edition of "Data Science Day", one of the biggest Data Science events in the state of São Paulo;
- Partnered with important companies such as Microsoft, Accenture, Movile and Udacity to deliver speeches or participate in the panels.

- **Hult Prize at the University of Tokyo (2017)**

- Promotions Manager in the Hult Prize organizing committee at the University of Tokyo. The Hult Prize is an international championship about technology and entrepreneurship applied to solve social issues in developing countries.

Community Activities

- **Students' Representative Council (2016)**

- Represented the students of the Economics course in meetings with professors and directors of the department during the whole year.

- **English Teacher for Low-income Students (2013)**

- Teacher in a university preparatory course for low-income students.

Tutorials/Demos

Click ***here*** to check some of my tutorials and demos.

Technical Skills

- **Programming and Research Softwares:** Python, R, Stata, \LaTeX , VBA, Excel, SQL.

- **Languages:** Portuguese (Native speaker), English (Fluent speaker) and Spanish (Intermediate speaker).