Daniel Lemes Gribel *December 27, 1990*

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Summary. I am a PhD candidate in optimization and machine learning at the Computer Science Department of PUC-Rio (expected conclusion in July 2021). I have experience with mathematical modeling, data cleaning & preprocessing, software development, and the designing of dashboards for data visualization. I had the opportunity to work in challenging industry projects involving software development with different programming languages (e.g., Python, R, Julia, C++, Java) and machine learning platforms (e.g., numpy, scikit-learn). In the last years, I have been actively conducting scientific works, focusing on probabilistic models and optimization techniques for semi-supervised learning, data clustering, and community detection.

Fields of interest. Data science, Machine learning, Optimization, Pattern recognition, Data visualization.

Experience

CIRRELT / Polytechnique Montréal
MONTRÉAL, CANADA
Research visitor / Doctorate exchange
Oct'18 – Sep'19

One-year scholarship at the Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation (CIRRELT), as part of my doctorate research on semi-supervised clustering (CAPES funding).

PUC-Rio
RIO DE JANEIRO, BRAZIL
Teaching assistant
Mar'18 – Jul'18

Graduate teaching assistant and students tutor in the *Discrete structures* undergraduate course at PUC-Rio, teaching the following topics: Mathematical induction, Combinatorics, and Graphs.

IBM Research Center
RIO DE JANEIRO, BRAZIL
Software developer (internship)
Jul'12 – Jun'14

Software developer (Java, Python, SQL) in the Social Data Analytics group, working in research projects involving machine learning and data analytics, including natural language processing, sentiment analysis, and data visualization. Projects: Social network simulator applied for the US presidential race (2012); Real-time sentiment analysis in social media: the 2014 World cup case (2013-14); Data mining algorithms for event detection in social networks (2014).

Argo Internet
MANAUS, BRAZIL
Web developer (internship)
Feb'09 – Jul'11

Project of interfaces, software technical specification, web development (PHP, SQL).

Education

Pontifical Catholic University of Rio de Janeiro (PUC-Rio)
RIO DE JANEIRO, BRAZIL
PhD in Computer Science *
Mar'17 – Jul'21 (on going)

Semi-supervised learning with inaccurate annotations: Models and methods
Advisors: Thibaut Vidal and Michel Gendreau

Pontifical Catholic University of Rio de Janeiro (PUC-Rio)
RIO DE JANEIRO, BRAZIL
Master degree in Computer Science *
2015 – 2017

Hybrid genetic algorithm for the minimum sum-of-squares clustering problem
Advisor: Thibaut Vidal

Federal University of the State of Rio de Janeiro (UNIRIO)
RIO DE JANEIRO, BRAZIL
Bachelor degree in Information Systems
2010 – 2014

A clustering-based approach to detect probable outcomes of lawsuits
Advisors: Maíra Gatti and Leonardo Azevedo

Skills & Competencies

Theoretical background

- Machine learning (linear regression, SVM, decision trees, neural networks, clustering, PCA), Probability theory, Stochastic models, Combinatorial optimization, Convex optimization, Graphs, Meta-heuristics, Evolutionary algorithms.

Programming

- Mature knowledge: Python, R, Julia, C, C++, Java, numpy, scikitlearn, ggplot, d3.js, Git, LaTeX.
- Intermediate knowledge: MySQL, SQLite, DB2, JavaScript, HTML, CSS, Azure ML, CPLEX, Gurobi, JuMP, SVN.

Languages

- Portuguese (*native*), English (*full professional working proficiency*), French and Spanish (*elementary proficiency*).

Additional information

- I am a very open-minded person regarding programming paradigms, languages, and frameworks. I am also very attentive to details, solicitous to colleagues, and seriously committed to ethical standards.
- I have recently published/presented scientific works in international journals and conferences, such as Pattern Recognition, ICPR, INFORMS Journal on Optimization, IFORS, and CIKM.
- The research publications for which I am the first author are publicly available on ArXiv platform and are followed by open-source code on Github.
- I have 5+ years of communication in English (technical writing + speaking), with articles recently published in high-quality international journals.
- My previous professional experiences include working in very interdisciplinary groups with colleagues from different backgrounds and countries.

Publications

[2021] Semi-supervised clustering with inaccurate pairwise annotations. *Pre-print article. ArXiV: 2104.02146.* D. Gribel, M. Gendreau, T. Vidal.

[2020] Assortative-constrained stochastic block models. *25th International Conference on Pattern Recognition (ICPR). IEEE, 2021.* D. Gribel, T. Vidal, M. Gendreau.

[2019] HG-means: A scalable hybrid genetic algorithm for minimum sum-of-squares clustering. *Pattern Recognition 88, 569-583, 2019.* D. Gribel, T. Vidal.

[2019] Separable convex optimization with nested lower and upper constraints. *INFORMS Journal on Optimization 1 (1), 71-90, 2018.* T. Vidal, D. Gribel, P. Jaillet.

[2015] A clustering-based approach to detect probable outcomes of lawsuits. *Proceedings of the 24th ACM International on Conference on Information and Knowledge Management, 2015 (CIKM'15).* D. Gribel, M. Gatti, L. Azevedo.

[2013] Large-scale multi-agent-based modeling and simulation of microblogging-based online social network. *International Workshop on Multi-Agent-based Simulation, 2013 (MABS'13).* M. Gatti, A. P. Appel, C. Pinhanez, C. Santos, D. Gribel, P. Cavalin, S. Barbosa Neto.

[2013] Visual analytics of sentiment trends in social media streams: The 2013 Confederation Cup case. *IEEE VIS, 2013.* M. Gatti, A. Rademaker, D. Lemes, P. Cavalin, C. Pinhanez, R. de Paula.

Patents

[2015] Real-time filtering of massive time series sets for social media trends (*US 20150347392 A1*)
Inventors: P. Cavalin, M. Gatti, D. Gribel, R. de Paula, C. Pinhanez, A. Rademaker.
Publication type: Application.