Miguel Biron-Lattes

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About me

PhD in statistics with extensive professional experience in the financial industry, both in the private and public sectors. My main motivation is to seek opportunities where I can develop and implement advanced statistical computational methods to drive innovation. I am particularly interested in research positions within companies dedicated to developing scientific knowledge, where I can apply my expertise to solve complex problems and contribute to cutting-edge advancements in the field.

Education

Ph.D. Statistics *University of British Columbia* – Vancouver, BC — Sep 2018 — Aug 2024
- Supervisors: Drs. Alexandre Bouchard-Côté & Trevor Campbell
- Thesis: "Automatic massively parallel Markov chain Monte Carlo with quantifiable error"

M.A. Statistics, *Columbia University* – New York, NY — Sep 2014 — May 2015

B.Sc.Eng. Industrial Engineering, *Universidad de Chile* – Santiago, Chile — Mar 2006 — Jul 2012
- Considers also a professional degree in Industrial Engineering

Experience

Senior Consultant, *UBC Statistics* – Vancouver, BC — Dec 2019 — Oct 2020

In charge of organizing and holding meetings with clients, and supervising the work of a junior consultant responsible of writing a summary report with our recommendations. Notable projects:
- Prior Clinical Presentations and Service use Patterns as Predictors of Mortality in The Hotel Study Participants during the 10-year period of Observation
- Association between time–to–surgery and survival rates of breast cancer patients
- Assessing reliability of the Heckmatt scale for ultrasound-visualized spasticity-related fibrosis
- Characterizing brain metastases arising from head and neck cancer
- Evaluation of Wood-Cement Composites Made with Contaminated Wood Waste
- Analyzing glaucoma-related patient outcomes after anti-VEGF therapy
- COPD originates in polluted air: controlled human exposure study to diesel exhaust in COPD

Senior Financial Stability Analyst, *Financial Market Commission* – Santiago, Chile — Aug 2015 — Aug 2018

Investigated potential threats to the financial stability of the Chilean banking system by analyzing multiple data sources in order to produce actionable insights. In particular, this required processing massive databases with account-level data collected from banks using `SQL` and then analyzing them with `R`. Additionally carried out research projects on the topic of financial stability:
- Developing a method for Bayesian inference of default correlations by leveraging probability of default (PD) models
- Building a systemic risk indicator for retail loans using account-level and macroeconomic data
- Comparing the performance of statistical learning models for credit scoring
- Estimating the joint distribution of implicit bank PDs from market transactions of time deposits

Financial Engineering Analyst, *CLGroup Financial Services Cons.* – Santiago, Chile — Feb 2011 — Jun 2014

Lead a wide array of projects on quantitative modelling of market and credit risk for financial institutions. Notable examples:
- Quantifying counterparty credit risk exposure of an interest rate swaps portfolio
- Developing the market risk framework for a Central Counterparty of OTC derivatives
- Assessing the credit risk exposure of a government-backed portfolio of student loans
- Constructing probability of default models at multiple banks for credit risk management

Technical skills

Languages: English (fluent), Spanish (native).
Programming languages: Julia (advanced), R (advanced), Bash (advanced), Python (advanced), MATLAB (advanced), C/C++ (intermediate), Java (intermediate)
Version control: Git (advanced)
Query languages: Oracle SQL (advanced), Transact-SQL (advanced)
Writing: LaTeX(advanced)
Spreadsheets: Microsoft Excel (advanced).

Publications

Biron-Lattes, M., Surjanovic, N., Syed, S., Campbell, T., & Bouchard-Côté, A. (2024) autoMALA: Locally adaptive Metropolis-adjusted Langevin algorithm. *AISTATS 2024, PMLR* 238:4600-4608.

Biron-Lattes, M., Campbell, T., & Bouchard-Côté, A. (2024) Automatic Regenerative Simulation via Non-Reversible Simulated Tempering. *JASA*, 1–13.

Biron-Lattes, M., Bouchard-Côté, A., & Campbell, T. (2023) Pseudo-marginal inference for CTMCs on infinite spaces via monotonic likelihood approximations. *JCGS*, 32(2), 513-527.

Biron-Lattes, M., Córdova, F., & Lemus, A. (2019) *Banks' business model and credit supply in Chile: the role of a state-owned bank*. BIS Working Paper No 800.

Biron-Lattes, M., & Bravo, C. (2014) On the discriminative power of credit scoring systems trained on independent samples. In *Data Analysis, Machine Learning and Knowledge Discovery* (pp. 247-254). Springer International Publishing.