Miguel Biron-Lattes

Vancouver, BC, V6E 1L9 | miguelbl9@gmail.com | +1-236-818-3733 | miguelbiron.github.io

linkedin.com/in/miguelbiron | github.com/miguelbiron

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 — Present

Assist graduate students at UBC in formulating an appropriate statistical methodology for their thesis research projects. The senior position also involves mentoring junior consultants by helping them to deal with clients, and giving them feedback on the quality of their recommendations.

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:
- Participated in an international collaborative research project coordinated by the Bank of International Settlements (BIS), aimed at understanding the relationship between banks' business models and the overall supply of credit.
- Developed a method for Bayesian inference of default correlations by leveraging probability of default (PD) models
- Built a systemic risk indicator for retail loans using account-level and macroeconomic data
- Carried out a systematic comparison of 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

Projects

`Pigeons.jl`: Distributed and parallel sampling from intractable distributions
- A Julia package to approximate challenging posterior distributions, and more broadly, Lebesgue integration problems.
- Role: co-author and maintainer.
- Repo: github.com/Julia-Tempering/Pigeons.jl
- Tools used: Julia, MPI

Technical skills

Languages: English (fluent), Spanish (native).
Programming languages: Julia (advanced), R (advanced), Bash (advanced), Python (intermediate), MATLAB (intermediate), C/C++ (intermediate), Java (intermediate).
Version control: Git (advanced).
Containerization: Docker (intermediate).

Cluster schedulers: Slurm (advanced), PBS (advanced).
Query languages: Oracle SQL (advanced), Transact-SQL (advanced).
Distributed computation: MPI (intermediate).
Workflow systems: Nextflow (advanced).
Spreadsheets: Microsoft Excel (advanced).
Document typesetting: LaTeX (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.

Last updated: October 8, 2024