Gian Carlo Diluvi

Updated: November 2026

giankdiluvi@gmail.com | +1 (778) 228-5434 | diluvi | giankdiluvi | Vancouver, BC | **Citizenship:** Mexico, Canada

Skills

Statistician with 10 years of industry, consulting, and academic experience in Bayesian modelling.
Programming: Python, R, Julia, SQL, Bash. **PPLs:** Stan, NIMBLE, JAGS, BUGS.
Stats & ML: NumPy, SciPy, PyTorch, Pandas, tidyverse. **Other tools:** Git, Tableau, SSH, Slurm.

Professional Experience

The University of British Columbia 2020–Present

Statistical Consultant and Teaching Assistant, Department of Statistics

- Developed **statistical modelling pipelines** (mixed effects models, GLMs, ANOVA) in R & Python for 10+ projects across multiple fields (e.g., metabolomics in women's health & craniotomy risk profiles).
- **Sample size calculations** to guarantee high statistical power to detect small effect sizes.
- Designed and led weekly hour-long tutorials on **statistical modelling, probability, and consulting**.
- Led onboarding of ∼50 incoming TAs, including giving 1:1 feedback and organizing 1-day bootcamp.

Pfizer Inc. 2016–2019

Business Analytics Intern (2016), Analyst (2017), Coordinator (2018), & Junior Manager (2019)

- Led a team of two analysts providing data analyses to diverse stakeholders (marketing, finance, access).
- Spearheaded the development of a **company-wide dashboard** (SQL, R tidyverse, & Tableau) for in-depth business reviews. Trained a **random forest model** (Python) to identify high-volume prescribers.

Mexico's National Electoral Institute (INE) 2018 (consulting job)

Statistician, Quick Counts Committee for the 2018 Mexican Presidential Election

- Developed a **Bayesian model for online estimation** of election data with fast posterior updates (R).
- Designed a **geo-based** stratified sampling scheme to ensure low estimation error with high probability.
- Created an interactive R Shiny dashboard to monitor the results on election night.

Selected research

Applied modelling: causal Bayesian inference with high-dimensional educational data

- Developed novel **causal Bayesian item response theory models** to measure the causal effect of in-class activities on student outcomes. Fit to a large, messy data set with five years of student data.
- Coded a custom MCMC sampler (Julia) to scale inference on **150K parameters** and **1M data points**. Common off-the-shelf samplers (Stan, JAGS, NIMBLE) failed due to the scale of the problem.
- Estimated **average treatment effects** to obtain actionable insights via posterior predictive simulations.

Machine learning: uncertainty quantification for discrete latent variables

- Developed a novel **machine learning algorithm** (PyTorch, NumPy) for Bayesian inference that handles mixed discrete and continuous parameter estimation using normalizing flows.
- Compared against competitors on UBC's **high-performance computing cluster** (Slurm, SSH).
- **10x faster than state-of-the-art alternatives**, enabling fast and reliable uncertainty quantification.

Education

The University of British Columbia (UBC) 2021–January 2027 (expected)

Doctor of Philosophy (PhD) in Statistics
Supervisors: Dr. Trevor Campbell and Dr. Benjamin Bloem-Reddy.
Research focus: Bayesian modelling, causal inference, high-dimensional data, discrete parameters.

The University of British Columbia (UBC) 2019–2021

Master of Science (MSc) in Statistics
Supervisors: Dr. Trevor Campbell and Dr. Benjamin Bloem-Reddy.
Research focus: variational Bayes, Bayesian inference, optimization.

Instituto Tecnológico Autónomo de México (ITAM) 2013–2017

Bachelor of Science (BSc) in Applied Mathematics, *summa cum laude*
Research focus: Bayesian design of experiments, generalized linear models.