Gian Carlo Diluvi M.

Contact

Email: `gian.diluvi@stat.ubc.ca`   **Website:** `https://giankdiluvi.github.io`

Education

THE UNIVERSITY OF BRITISH COLUMBIA   2021–Present
Doctor of Philosophy (PhD) in Statistics
Supervisors: Dr. Trevor Campbell and Dr. Benjamin Bloem-Reddy.

THE UNIVERSITY OF BRITISH COLUMBIA   2019–2021
Master of Science (MSc) in Statistics
Thesis: *Locally-Adaptive Boosting Variational Inference.*
Supervisors: Dr. Trevor Campbell and Dr. Benjamin Bloem-Reddy.
GPA: 94.2% out of 100%.

INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO   2013–2017
Bachelor of Science (BSc) in Applied Mathematics, *summa cum laude*
Thesis: *Bayesian Design of Experiments for Generalized Linear Models.*
Supervisor: Dr. Ernesto Barrios-Zamudio.
GPA: 96.9% out of 100%.

Publications and Software

PEER-REVIEWED PUBLICATIONS   *First Author
- <u>G. C. Diluvi</u>*, B. Bloem-Reddy, and T. Campbell. (2024). **Mixed variational flows for discrete variables**. In *International Conference on Artificial Intelligence and Statistics.*
- <u>G. C. Diluvi</u>*, B. Dunham, N. Heckman, M. Lee, and R. Lourenzutti. (2022). **Structured, interactive resources for teaching Bayesian inference**. In *International Conference on Teaching Statistics.*

WORKSHOPS AND CONFERENCES
- <u>G. C. Diluvi</u>*, S. Isberg*, B. Dunham, N. Heckman, and M. Lee. (2024). **Using online student focus groups in the development of new educational resources**. In *The Royal Statistical Society International Conference.*

SOFTWARE
- MAD Mix: Learn discrete distributions with Measure-preserving And Discrete MixFlows. `https://github.com/giankdiluvi/madmix`.
- LBVI: Bayesian inference via locally-adapted boosting variational inference. `https://github.com/ubc-bayes/mixinf`.

NON-REFEREED PUBLICATIONS
- <u>G. C. Diluvi</u> (2019). **How does it make you feel?** *Significance, 16*(3), 26–29.
- <u>G. C. Diluvi</u>*, M, Mendoza, and G. Orantes (2018). **Statistics in the 2018 Mexican general election quick counts**. *Laberintos e Infinitos, 48*, 29–37.
- M. Mendoza, <u>G. C. Diluvi</u>, and G. Orantes (2018). **Description of the Bayesian estimation model, stratification design, and sample size for Chiapas.**. *Scientific, logistic, and operational criteria for the Quick Counts and sampling design protocol*, 43–45 and 53–67.

Conferences

Talks
- 2023 SFU/UBC Joint Statistics Seminar: *Mixed variational flows for discrete variables.*
- 2022 ICOTS 11: *Structured, interactive resources for teaching Bayesian inference.*
- 2021 UBC Statistics Seminar: *Locally-adaptive boosting variational inference.*
- 2020 UBC Social Exposome Cluster Resarch Day: *Reliable statistical inference with complex, heterogeneous data.* (Prize for best master's presentation.)
- 2019 SFU/UBC Joint Statistics Seminar: *Quick counts in the 2018 Mexican general election.*

Organized
- 2021 SFU/UBC Joint Statistics Seminar (co-organizer).
- 2019–2021 weekly graduate student-run seminars at UBC Statistics (co-organizer).

Chaired
- 2021 WNAR of IBS Distinguished Speaker Q&A with Dr. Michael I. Jordan (co-chair).

Research Positions

The University of British Columbia — 2021–Present
Research Assistant, Department of Statistics
Supervisors: Dr. Trevor Campbell and Dr. Benjamin Bloem-Reddy

Doctoral research focused on developing algorithms for Bayesian inference over discrete variables.

The University of British Columbia — 2020–2023
Research Assistant, Department of Statistics
Supervisor: Dr. Nancy Heckman

Research focused on improving introductory instruction of Bayesian inference and on assessing interactive simulations in development via think-aloud sessions with students.

The University of British Columbia — 2020–2021
Research Assistant, Department of Statistics
Supervisors: Dr. Trevor Campbell and Dr. Benjamin Bloem-Reddy

Master's research project that combined ideas from MCMC and boosting variational inference to develop a novel algorithm for Bayesian inference.

Teaching Positions

The University of British Columbia — 2021–Present
Teaching Assistant Trainer, Department of Statistics

Organize and facilitate the yearly TA orientation workshop for incoming TAs. Supervise and give 1-on-1 feedback to new TAs.

The University of British Columbia — 2019–Present
Teaching Assistant, Department of Statistics
- Spring 2022: STAT 450 Case Studies in Statistics.
- Spring 2020: STAT 302 Introduction to Probability.
- Spring 2020: STAT 203 Statistical Methods.
- Fall 2019: STAT 200 Elementary Statistics for Applications.

Instituto Tecnológico Autónomo de México — 2017
Undergraduate Faculty Member, Department of Mathematics

Answer questions from Applied Mathematics undergraduate students.

Instituto Tecnológico Autónomo de México — 2016
Teaching Assistant, Department of Statistics
- Spring 2016, Fall 2016: EST-14102 Probability II.

Service

Reviewer
- International Conference on Teaching Statistics (ICOTS).

Service to UBC
- 2023 UBC Faculty of Science external review, graduate student participant.
- 2021 UBC Statistics external review, graduate student participant.

Distinctions and Awards

- 2021–2024 UBC Four Year Doctoral Fellowship.
- 2021 UBC Faculty of Science Killam Teaching Assistant Award nomination.
- 2021 UBC Department of Statistics Teaching Assistant Award.
- 2020 UBC SEC Research Day: prize for best master's presentation.
- 2019 XXIV ITAM Alumni Research Awards: Honorable Mention, applied math category.

Professional Experience

Pfizer Inc — 2016–2019
Business Analytics
Intern (2016), Analyst (2017), Coordinator (2018), Sr. Coordinator (2019)

I developed data-driven analyses and presented them to marketing directors with no formal statistical training. My last two projects were leading the development of a company-wide dashboard used in monthly in-depth business reviews and training a random forest model to identify potentially-loyal physicians.

Mexico's National Electoral Institute (INE) — 2018
Research Assistant

The INE formed a nine-member and twelve-assistant committee to carry out quick counts for the 2018 Mexican general election. I worked as a research assistant for committee-member Dr. Manuel Mendoza. We improved his original Bayesian model, defined the sampling design used in Chiapas, and I developed the code for generating the official report for the Presidential election.

Other Relevant Experience

The University of British Columbia — 2022–2024
Graduate Student Representative, Department of Statistics

The University of British Columbia — 2020–2022
Statistical Consultant, Department of Statistics

Some of the projects that I have worked on:
- 2022 The use of the R sounds in the variety of Portuguese spoken by Santomean immigrants in Portugal (*mentor*).
- 2021 The right to Vancouverism: social reproduction placemaking in the revanchist city.
- 2021 Sample size calculations and statistical analysis of key e-commerce metrics.
- 2020 Functional consequences of TMEM30A mutations in the survival of lymphoma.
- 2020 The sporting history and athlete development pathway of Canadian university athletes.

Instituto Tecnológico Autónomo de México — 2015–2017
Editorial Team Member, Laberintos & Infinitos
Editor (2015–2016), Editor in Chief (2017)
Mathematics, statistics, and actuarial science student journal.