Gian Carlo Diluvi M.

Contact

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Education

THE UNIVERSITY OF BRITISH COLUMBIA   2021–Present
Doctor of Philosophy (PhD) in Statistics

Supervisors: Dr. Trevor Campbell and Dr. Benjamin Bloem-Reddy.
Advanced to candidacy in August 2024.

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

2024   G. C. Diluvi*, B. Bloem-Reddy, and T. Campbell. **Mixed variational flows for discrete variables**. In *International Conference on Artificial Intelligence and Statistics*.

2022   G. C. Diluvi*, B. Dunham, N. Heckman, M. Lee, and R. Lourenzutti. **Structured, interactive resources for teaching Bayesian inference**. In *International Conference on Teaching Statistics*.

Workshops and conferences

2024   G. C. Diluvi*, S. Isberg*, B. Dunham, N. Heckman, and M. Lee. **Using online student focus groups in the development of new educational resources**. In *The Royal Statistical Society International Conference*.

Software

2023   MAD Mix: Learn discrete distributions with Measure-preserving And Discrete MixFlows. `https://github.com/giankdiluvi/madmix`.

2021   First Bayes R: Teach and learn Bayesian statistics with interactive Shiny apps! `https://github.com/giankdiluvi/first-bayes-r`.

2019   LBVI: Bayesian inference via locally-adapted boosting variational inference. `https://github.com/ubc-bayes/mixinf`.

Non-refereed publications

2019   G. C. Diluvi. **How does it make you feel?** *Significance, 16*(3), 26–29.

2018   G. C. Diluvi*, M, Mendoza, and G. Orantes. **Statistics in the 2018 Mexican general election quick counts**. *Laberintos e Infinitos, 48*, 29–37.

2018   M. Mendoza, G. C. Diluvi, and G. Orantes. **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.

TALKS

2025	WNAR Annual Meeting: *Student Experiences Navigating Graduate School.* (Panelist.)
2024	UBC Statistics Seminar: *Using online student think-alouds to develop Shiny apps for teaching statistics.* (Co-presenter.)
2024	RSS International Conference: *Using student focus groups in the development of new educational resources.*
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.*
2018	ITAM Mathematics Colloquium: *Statistics behind the 2018 Mexican general election quick counts.*

ORGANIZED

2021	SFU/UBC Joint Statistics Seminar (co-organizer).
2019–21	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).

POSTERS

2024	AISTATS: *Mixed variational flows for discrete variables.*
2024	RSS International Conference: *Using student focus groups in the development of new educational resources.*

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   2020–2024
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	2019–Present

Teaching Assistant, Department of Statistics

2025 Fall	STAT 306: Finding Relationships in Data.
2025 Spring	STAT 450: Case Studies in Statistics.
2022 Spring	STAT 450: Case Studies in Statistics.
2020 Spring	STAT 302: Introduction to Probability.
2020 Spring	STAT 203: Statistical Methods.
2019 Fall	STAT 200: Elementary Statistics for Applications.

THE UNIVERSITY OF BRITISH COLUMBIA	2021–2024

Teaching Assistant Trainer, Department of Statistics

- Organize and facilitate the yearly TA orientation workshop for incoming TAs.
- Revamp the 2022 and 2023 orientation workshops, including redesigning most of the modules and restructuring it from two days to one day.
- Automate the deployment, data gathering and analysis, and result emailing of the TA evaluation surveys carried out each term.
- Supervise and give 1-on-1 feedback to new TAs.

INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO	2016

Teaching Assistant, Department of Statistics

2017 F&S	Undergraduate Faculty (answer questions from all courses).
2016 Fall	EST-14102: Multivariate Probability.
2016 Spring	EST-14102: Multivariate Probability.

SERVICE

REVIEWER

- Transactions on Machine Learning Research (TMLR).
- International Conference on Teaching Statistics (ICOTS).

SERVICE TO UBC

2022–24	UBC Statistics Graduate Student Association, graduate student representative.
2023	UBC Faculty of Science external review, graduate student participant.
2021	UBC Statistics external review, graduate student participant.

SERVICE TO ITAM

2015–17	ITAM Math, Stats, and Actuarial Science student journal, Laberintos & Infinitos, editor (2015–2016) and editor in chief (2017).

DISTINCTIONS AND AWARDS

2021–25	UBC President's Academic Excellence Initiative PhD Award ($5,500 CAD).
2021–24	UBC Four Year Doctoral Fellowship ($95,800 CAD).
2024	UBC Graduate Student Travel and Research Dissemination Fund ($500 CAD).
2021–23	UBC Department of Statistics Entrance Scholarship ($15,000 CAD).
2019–23	UBC International Tuition Award ($16,000 CAD).
2021	UBC Department of Statistics Teaching Assistant Award ($500 CAD).
2020	UBC SEC Research Day: prize for best master's presentation ($500 CAD).
2019	XXIV ITAM Alumni Research Awards: Honorable Mention, applied math category.

PROFESSIONAL EXPERIENCE

THE UNIVERSITY OF BRITISH COLUMBIA   2020–Present

Statistical Consultant, Department of Statistics

Projects that I have worked on:

2025	The effect of estrogen and progesterone on the way we breathe during exercise in hypoxia and normoxia (*mentor as TA of STAT 450*). (Research based on subsequent consulting published in client's MSc thesis: S. Arn. (2025). *Hormones, hypoxia and exercise hyperpnoea: considerations of the menstrual cycle and hormone replacement therapy.* University of British Columbia.)
2022	The use of the R sounds in the variety of Portuguese spoken by Santomean immigrants in Portugal (*mentor as TA of STAT 450*).
2021	The right to Vancouverism: social reproduction placemaking in the revanchist city.
2021	An investigation on the role of urban neighborhood green spaces in mitigating stress inflicted due to the COVID-19 isolation.
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.
2020	Humane pigeon pest control management: Ovocontrol P at TransLink Skytrain stations.
2020	Navigational strategies in rats that lack newborn neurons.
2020	An analysis on commercial real estate property assessment and property tax in BC.
2020	Exploring the effect of environmental drivers on salmon condition during outmigration.

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.