

## 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%.

## 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 learning with discrete variables.

THE UNIVERSITY OF BRITISH COLUMBIA 2020–2023

**Research Assistant**, Department of Statistics

Supervisor: Dr. Nancy Heckman

Research focused on improving introductory Bayesian instruction 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.

**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.

## PUBLICATIONS

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### PREPRINTS

\*First Author

- G. C. Diluvi\*, B. Bloem-Reddy, T. Campbell. **Mixed variational flows for discrete variables**. Available at arXiv:2308.15613.
- G. C. Diluvi\*, S. Isberg\*, B. Dunham, N. Heckman, and M. Lee. **Using online student focus groups in the development of new educational resources**. Available at arXiv:2304.00149.

### PEER-REVIEWED PUBLICATIONS

- G. C. Diluvi\*, B. Dunham, N. Heckman, M. Lee, and R. Lourenzutti. (2022). **Structured, interactive resources for teaching Bayesian inference**. In *International Conference on Teaching Statistics (ICOTS 11)*.

### NON-REFEREED PUBLICATIONS

- G. C. Diluvi (2021). **Locally-adaptive boosting variational inference**. *University of British Columbia*. (MSc thesis.)
- G. C. Diluvi (2019). **How does it make you feel?** *Significance*, 16(3), 26–29.
- G. C. Diluvi\*, M. Mendoza, and G. Orantes (2018). **Statistics in the 2018 Mexican general election quick counts**. *Laberintos e Infinitos*, 48, 29–37.
- M. Mendoza, G. C. Diluvi, 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

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### TALKS

- 2022 ICOTS 11: *Structured, interactive resources for teaching Bayesian inference*.
- 2021 UBC Statistics Seminar: *Locally-adaptive boosting variational inference*.
- 2020 UBC Social Exposome Cluster Research Day: *Reliable statistical inference with complex, heterogeneous data*. (Prize for best master's presentation.)
- 2019 Winter SFU/UBC Joint Statistics Seminar: *Quick counts in the 2018 Mexican general election*.
- 2018 ITAM's Mathematics Colloquium, Mexico City: *Statistics behind the 2018 Mexican general election quick counts*.
- 2017 ITAM's Mathematics Colloquium, Mexico City: *Generalized linear models*.

### 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).

## SERVICE

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### 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

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- 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 committee member Dr. Manuel Mendoza's research assistant. 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–Present

### **Graduate Student Representative**, Department of Statistics

THE UNIVERSITY OF BRITISH COLUMBIA 2020–Present

### **Statistical Consultant**, Department of Statistics

Projects that I have worked in as a statistical consultant at UBC:

- 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 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.

INSTITUTO TECNOLÓGICO AUTÓNOMO DE MÉXICO 2015–2017

### **Editorial Team Member**, Laberintos & Infinitos

(ITAM's Mathematics' student journal)

Editor (2015–2016), Editor in Chief (2017)