Matías Altamirano Montero

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EDUCATION

University College London   London, UK
PhD in Statistical Science   2022–Present

- Topic: Robust Bayesian methods with conjugacy properties
- Supervisors: Dr. Jeremias Knoblauch, Dr. François-Xavier Briol

Universidad de Chile   Santiago, Chile
M.S. in Engineering Sciences, Applied Mathematics   2020–2021

- Thesis: "Nonstationary multi-output Gaussian processes via harmonizable spectral mixtures"
- Supervisor: Dr. Felipe Tobar
- Ranked in top 10%, best thesis award

École Centrale Paris   Paris, France
Student Exchange Program   Spring 2017

Universidad de Chile   Santiago, Chile
B.S. in Engineering Sciences, Mathematics   2014–2019

- Ranked in top 1%, 2 awards for outstanding academic achievement

PUBLICATIONS

[1] **M. Altamirano**, F.-X. Briol, and J. Knoblauch, "Robust and conjugate Gaussian process regression", in *International Conference on Machine Learning*, 2024.

[2] G. Durán-Martín, **M. Altamirano**, A. Y. Briol Shestopaloff, L. Sánchez-Betancourt, J. Knoblauch, M. Jones, F.-X. Briol, and K. Murphy, "Outlier-robust Kalman filtering through generalised bayes", in *International Conference on Machine Learning*, 2024.

[3] **M. Altamirano**, F.-X. Briol, and J. Knoblauch, "Robust and scalable Bayesian online changepoint detection", in *International Conference on Machine Learning*, 2023, pp. 642–663.

[4] **M. Altamirano** and F. Tobar, "Nonstationary multi-output Gaussian processes via harmonizable spectral mixtures", in *International Conference on Artificial Intelligence and Statistics*, 2022, pp. 3204–3218.

[5] **M. Altamirano**, P. Uribe, D. Schlotterbeck, A. Jiménez, R. Araya, J. van der Molen Moris, and D. Caballero, "Unsupervised characterization of lessons according to temporal patterns of teacher talk via topic modeling", *Neurocomputing*, 2021, ISSN: 0925-2312.

[6] **M. Altamirano**, A. Jiménez, and R. Araya, "Lessons clustering using topics inferred by unsupervised modeling from textbooks", in *International Conference in Methodologies and intelligent Systems for Techhnology Enhanced Learning*, Springer, 2020, pp. 85–94.

Experience

Universidad de Chile - Center for Mathematical Modeling   Santiago, Chile
Research Assistant, Supervisor: Dr. Joaquín Fontbona   September 2021–June 2022

Universidad de Chile - Center for Advanced Research in Education   Santiago, Chile
Research Assistant, Supervisor: Dr. Roberto Araya   March 2019–January 2022
  – Designed and implemented unsupervised learning models to analyse temporal patterns of teacher talk.
  – Published findings in reputable journals and conferences: [5], [6]

Awards & Grants

- **International Conference on Machine Learning (ICML) Spotlight.** Awarded to 3.5% out of more than 9,000 submissions as a marker of quality and significance   2024
- **Poster prize winner** worth £500 judged by Prof. Guy Nason, UCL Departmental poster session.   2023
- **UCL Departmental Teaching Assistant studentship** for 3.5 years worth around £150,000.   2022
- **Best thesis**, Msc in applied mathematics, Universidad de Chile.   2022
- **Best Paper Award** at 10th International Conference in Methodologies and Intelligent Systems for Technology Enhanced Learning [6]. Achieved as an undergraduate student.   2020
- **Center of Mathematical Modelling (CMM), Msc in applied mathematics Studentship** worth around £10,000.   2020
- **Outstanding student**, Faculty of Physical and Mathematical Sciences, Universidad de Chile.   2015/2019

Talks & Posters

Talks:

- **Robust and Scalable Bayesian Inference**
  – Newcastle University Statistics Seminar, Newcastle, UK   May 2024
  – UCL Statistical Science PhD Seminars, London, UK   May 2024
  – UCL Department of Electronic and Electrical Engineering, London, UK   March 2024
- **Robust and Scalable Bayesian Online Changepoint Detection**
  – UCL Distance-Based Methods in Machine Learning Workshop, London, UK   June 2023

Posters:

- **Robust and Conjugate Gaussian Process Regression**
  – Workshop on Functional Inference and Machine Intelligence (FIMI), Bristol, UK   March 2024
  – UCL Statistical Science Departmental Poster Session, London, UK   Nov 2023
- **Robust and Scalable Bayesian Online Changepoint Detection**
  – International Conference on Machine Learning (ICML), Hawaii, US   July 2023
  – Symposium on Advances in Approximate Bayesian Inference (AABI), Hawaii, US   July 2023
  – SIAM UKIE National Student Chapter Conference, Oxford, UK   June 2023
  – London Symposium on Information Theory, London, UK   May 2023

Services to the community

- **Reviewing activities:** AISTATS (2023, 2024), NeurIPS (2023, 2024), ICML (2023 Workshop on Structured Probabilistic Inference & Generative Modeling), Statistics and Computing
- **Organisation of Workshops & Events:** Co-organiser of UCL Distance-based methods in Machine Learning workshop, co-organiser of asymptotic statistics reading group.

Teaching

- **Teaching Assistant** at UCL   2023
  STAT0004 (Term 1 2022/Term 2 2022/Term 2 2023), STAT0005 (Term 1 2022/Term 1 2023), STAT0023 (Term 2 2022), STAT0040 (Term 1 2023)
- **Teaching Assistant** at Universidad de Chile   2016-2020
  Multivariable Calculus (Fall 2016/Fall 2018/Fall 2019/Spring 2019/Fall 2020), Advanced Calculus and Applications (Spring 2019), Linear Algebra (Spring 2017/Spring 2018), Introduction to Calculus (Spring 2017)

Coding and Computer skills

- **Languages:** Python, Matlab, Java, SQL, R

- **Additional Skills:** Linux, LaTeX, Github

Languages

- **Spanish:** Native Speaker
- **English:** Fluent
- **French:** Basic