Samuel Orso

Contact Information

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Academic Career

Education

PhD in Statistics, Geneva School of Economics and Management, University of Geneva, Switzerland, 2013 - 2019

- Thesis: "*Contributions to Simulation-Based Estimation Methods*"
  Co-advisor: Prof. Maria-Pia Victoria-Feser
  Co-advisor: Prof. Stéphane Guerrier

MSc in Statistics, HEC Genève, University of Geneva, Switzerland, 2011 - 2013

- MSc Thesis: *"Robust Estimation for Bivariate Distribution"*

BSc in Management, HEC Genève, University of Geneva, Switzerland, 2008 - 2011

Employment History

Research Associate, Faculty of Science, University of Geneva, Switzerland, June 2025 - Present.

Lecturer in Data Science, HEC Lausanne, University of Lausanne, Switzerland, September 2018 - Present.

Research Associate, Research Institute for Statistics and Information Science, University of Geneva, Switzerland, February 2024 - June 2025.

Postdoctoral Scholar in Statistics, Research Center for Statistics, University of Geneva, Switzerland, February 2019 - January 2024.

Research Assistant in Statistics, Research Center for Statistics, University of Geneva, Switzerland, October 2013 - January 2019.

Lecturer in Statistics, University of Applied Sciences and Arts, Western Switzerland, September 2016 - September 2017.

Professional skills

Strong experience as user and programmer with the `R` and `C++` programming languages

Experience as user and programmer with `SQL`, `Python`, `TensorFlow`, `Torch`, `Mathematica`, `Matlab`, `Julia`, `HTML/CSS`, `Excel/VBA`

Strong user experience with `Microsoft Suite Office`, `LaTeX`, `slurm`, `VIM`, `GitHub`

Organisation of conferences

- **R-lunches**: co-organiser of monthly seminars at the University of Geneva for researchers interested in the `R` statistical software. Website: Next R-lunches.
- **Workshop of the Data Analytics Lab**: co-organiser of a workshop on statistical methods and data analytics. Website: Workshop DAL. Invited speakers:
  - 1st edition, May 2023: T. Cai (Harvard), Y. Ma (Penn State), X. He (Washington University in St. Louis), Z. Ying (Columbia).
  - 2nd edition, May 2024: Y. Ma (Penn State), R. Liu (Rutgers), J. Li (Penn State), J. Zhao (Wisconsin-Madison).
  - 3d edition, May 2025: T. Cai (Harvard), D. Zhou (National University of Singapore), F. Chiaromonte (Penn State), L. Zhang (Rutgers), G. Coqueret (EM Lyon).

Supervision of Master Thesis

- Hugo Troendle: MSc in Management, orientation Business Analytics, University of Lausanne, 2025. Master thesis: "*The Price is Right*". Internship at Rolex SA.
- Sophie Daya: MSc in Sustainable Management and Technology, HEC/IMD/EPFL, 2025. Master thesis: "*Supply chain mapping for deforestation exposure: integrating probabilistic origin mapping and predictive AI models*". Internship at Rolex SA.
- Zhiqi Feng: MSc in Management, orientation Business Analytics, University of Lausanne, 2025. Master thesis: "*Predicting Sales Performance for New Product Launches: An Empirical Analysis of Philip Morris International (PMI) Data*". Internship at Philipp Morris International.
- Alexander Liden: MSc in Management, orientation Business Analytics, University of Lausanne, 2025. Master thesis: "*Predicting Glass Demand Using Transfer Learning Techniques - How to discover new market opportunities with limited information*".
- Tiffany Davies: MSc in Management, orientation Business Analytics, University of Lausanne, 2024. Master thesis: "*Analyse et Prédiction du Flux de Patients dans une Clinique Dentaire*".
- Mélanie Vuitel: MSc in Management, orientation Business Analytics, University of Lausanne, 2024. Master thesis: "*Anomaly detection for predictive maintenance using machine learning*".
- Mathieu Maréchal: MSc in Management, orientation Business Analytics, University of Lausanne, 2023. Master thesis: "*Insights into Water Usage Patterns and Reporting: A Case Study at Droople*".
- Enzo Beijer: MSc in Management, orientation Business Analytics, University of Lausanne, 2023. Master thesis: "*Possible Factors that Influence Decision Making for Sustainability Projects*".
- Vania Rodrigues: MSc in Management, orientation Business Analytics, University of Lausanne, 2022. Master thesis: "*Data-driven approach to enter a nascent industry: the case of the Central Bank Digital Currency*".
- Sarah Ismail: MSc in Management, orientation Business Analytics, University of Lausanne, 2022. Master thesis: "*Forecasting Encryption Technologies using Wikipedia Pageview Statistics*".
- Lumia Claramunt: MSc in Management, orientation Business Analytics, University of Lausanne, graduated in 2019. Master thesis: "*German day-ahead spot price prediction*".

Teaching Activities

Starting as early as in 2016 during my PhD, I have taught ever since multiple classes at 4 Universities (University of Lausanne, University of Applied Sciences and Arts of Western Switzerland, EPFL and University of Geneva). These classes were given to students enrolled in different programs, such as Bachelor, Master, PhD, short courses, summer courses, executive education, and for students with different backgrounds, such as economics, management, mathematics, statistics, engineering. Current teaching activity:

- **Data and Code Management: From Collection to Application** (∼30 students), 6.0 ECTS, Master of Science in Management orientation Business Analytics, Faculty of Business and Economics (HEC) at the University of Lausanne. Taught every fall semester since 2025. Website: Data and Code Management.
- **Introduction à la Statistique** (∼350 students), 6.0 ECTS, Bachelor in International Relations, GSI, University of Geneva, spring semester 2025. Website: Introduction à la Statistique.
- "Four first weeks in Excel" for **Statistique et Méthodologie Pharmaceutique** (∼350 students), 2.0 ECTS, Bachelor in Pharmaceutical Sciences, Faculty of Science, University of Geneva, fall semester 2024.
- **Business Intelligence and Analytics** (∼230 students), 6.0 ECTS, Bachelor of Science in Economics and Management, Faculty of Business and Economics (HEC) at the University of Lausanne. Taught every spring semester since 2021.
- **Programming Tools in Data Science** (∼30 students), 6.0 ECTS, Master of Science in Management orientation Business Analytics, Faculty of Business and Economics (HEC) at the University of Lausanne. Taught every fall semester from 2018 to 2024. Website: Programming Tools in Data Science.

Prizes, Awards, Grants

- Recipient of the SNSF Flexibility Grant, 2019 – 2024 (80'699 CHF).
- Grants for attending conferences, 2019 – 2024 (5'450 CHF).
- Grants for organizing the workshop of the Data Analytics Lab, 2023 – 2025 (11'500 CHF).
- Best Grade & Best Master Thesis Awards, Pictet Group Charitable Foundation (2013).

Major Scientific Achievements

Talks

Invited Department Seminar

Workshop of the Data Analytics Lab, University of Geneva (2023 – 2025), Research Seminar of the Institute of Transportation and Economics, University of Dresden (2016), Epidemiological symposium, HUG (2016), Environmental engineer Seminar, EPFL (2016), Economic Research Seminar, Humboldt University Berlin (2015).

Conference Talks

16th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2023), Joint Statistical Meeting (JSM 2023), 12th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2019), Final CRoNoS meeting and Workshop on Multivariate Data Analysis (CRoNoS & MDA 2019), 22nd International Conference on Computational Statistics (COMPSTAT 2016), 7th International Conference on ERCIM WG on

Computa-tional and Methodological Statistics (ERCIM 2014), (COMPSTAT 2014) Conference on Computational Statistics, 4th International Conference on Robust Statistics (ICORS 2014).

Peer-reviewed publications

7. Ismail, S., Mermoud, A., Marechal, L., **Orso, S.**, Percia David, D., "*Capturing Trends Using OpenAlex and Wikipedia Page Views as Science Indicators: The Case of Data Protection and Encryption Technologies*", 27th International Conference on Science, Technology and Innovation Indicators (STI 2023). International Conference on Science, Technology and Innovation Indicators, 2023.

6. Miglioli, C., Bakalli, G., **Orso, S.**, Karemera, M., Molinari, R., Guerrier, S., Mili, N., "*Evidence of antagonistic predictive effects of miRNAs in breast cancer cohorts through data-driven networks*". Scientific Reports 12, p. 5166, 2022. DOI:10.1038/s41598-022-08737-5.

5. Guerrier, S., Jurado, J., Khaghani, M., Bakalli, G., Karemera, M., Molinari, R., **Orso, S.**, Raquet, J., Schubert, C., Skaloud, J., Xu, H., Zhang, Y., "*Wavelet-Based Moment-Matching Techniques for Inertial Sensor Calibration*". IEEE Transactions on Instrumentation and Measurement, 69(10), p. 7542-7551, 2020.

4. Clausen, P., Skaloud, J., **Orso, S.**, and Guerrier, S., "*Construction of Dynamically-Dependent Stochastic Error Models*". IEEE/ION Position, Location and Navigation Symposium (PLANS), Monterey, CA, p. 1336-1341, 2018.

3. Branca, M., **Orso, S.**, Molinari, R., Xu, H., Guerrier, S., Zhang, Y., Mili, N., "*Is Nonmetastatic Cutaneous Melanoma Predictable Through Genomic Biomarkers?*". Melanoma research, 28(1) p. 21-29, 2018.

2. Guerrier, S., **Orso, S.**, Victoria-Feser, M.-P., "*Parametric Inference for Index Functionals*". Econometrics, 6(2), p. 22, 2018.

1. Guerrier, S., Mili, N., Molinari, R., **Orso, S.**, Avella-Medina, M. & Ma, Y.,"*A Paradigmatic Regression Algorithm for Gene Selection Problems*". Frontiers in Genetics, Statistical Genetics and Methodology, 7(97), p. 1-11, 2016.

Contributions to books

Chapters on High Performance Computing and Blogdown: websites and blogs creation in "An Introduction to Statistical Programming Methods with `R`" (2020), `online book`

Working papers (selected)

7. Couturier, D.-L., Insolia, L., Karemera, M., **Orso, S.**, Victoria-Feser, M.-P., Guerrier, S., "*Modelling Censoring Thresholds for Accurate Sample Size Calculations with Growth-Curves Mixed Models in Cancer Research*".

6. Molinari, R., Bakalli, G., Miglioli, C., **Orso, S.**, Scaillet, O., Mili, N., Karemera, M., Guerrier, S., "*More of Less: A Rashomon Algorithm for Sparse Model Sets*".

5. **Orso, S.**, Karemera, M., Victoria-Feser, M.-P., Guerrier, S., "*An Accurate Percentile Method for Parametric Inference Based on Asymptotically Biased Estimators*". `arXiv:2405.05403`, (submitted).

4. Zhang, Y., Ma, Y., **Orso, S.**, Karemera, M., Victoria-Feser, M.-P., Guerrier, S., "*Just Identified Indirect Inference Estimator: Accurate Inference Through Bias Correction*". `arXiv:2204.07907` (submitted).

3. Okhrin, O., **Orso, S.**, "*Monotone Spline Smoothing for Nonlinear One Factor Copula Model*".

2. **Orso, S.**, Luta, G., "*Bias Correction for Confidence Interval of Weighted Poisson Means*".

1. Molinari, R., Bakalli, G., Guerrier, S., Miglioli, C., **Orso, S.**, Karemera, M., Scaillet, O., "*SWAG: A Wrapper Method for Sparse Learning*". arXiv:2006.12837 (submitted).

Peer-reviewed software

2. **Orso, S.**, Guerrier, S., "*ib: Bias correction through the iterative bootstrap*". *CRAN R-package*, v.0.2.1, 2025.

1. **Orso, S.**, Bakalli G., Miglioli, C., Molinari, R., Guerrier, S., "*swag: Sparse Wrapper Algorithm*". *CRAN R-package*, 2020.

Service to the Profession

- Reviewer for leading journals in statistics.
- Representative of the Participatory Council, GSEM, UNIGE, 2019 - 2024.
- Member of the Commission des premiers renouvellements, GSEM, UNIGE, 2019 - 2024.