Mirko Armillotta

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Research Interests

Count time series	Discrete-valued processes
Econometrics	Forecasting economic variables
Network time series	Observation-driven models
Statistical inference for dynamic models	Time Series Analysis

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Education

- **Ph.D. in Statistical Sciences**, University of Bologna, Italy,   5/2021

    - Dissertation Title: *Essays on discrete valued time series models* (Link)
    - Thesis Advisors: *Alessandra Luati, Monia Lupparelli*.
    - External Advisor: *Konstantinos Fokianos.*
    - External Reviewers: *David Matteson, Christian Francq.*

- **M.A. in Statistics, Economics and Business (cum laude)**, University of Bologna, Italy,   9/2017

    - Dissertation Title: *Analisi delle serie economiche e finanziarie con i modelli Markov-Switching Vector Autoregressive*.
    - Thesis Advisor: *Giuseppe Cavaliere*.

- **B.Sc. in Statistical Sciences (cum laude)**, University of Bologna, Italy,   7/2015

    - Dissertation Title: *La previsione della volatilità con dati a diverse frequenze: I modelli MIDAS*.
    - Thesis Advisor: *Luca De Angelis*.

Professional Experience

- Vrije Universiteit Amsterdam, The Netherlands

    - **Research Fellow**, Department of Econometrics & Data Science   9/2022–present

- Tinbergen Institute, The Netherlands

    - **Candidate Fellow**   5/2023–present

- University of Cyprus, Cyprus
  - **Postdoctoral Researcher**, Department of Mathematics & Statistics   11/2020–8/2022
- Lancaster University, UK
  - **Visiting Researcher**, Department of Mathematics & Statistics   1/2020–5/2020
- University of Bologna, Italy
  - **Teaching tutor**, Department of Statistics and Department of Economics   2017–2019

Awards & Fellowships

- **Marie Skłodowska-Curie Individual Fellowship** financed by the European Commission (4/2023–present)

- **Award for the Best Ph.D. thesis in Statistics 2022**, awarded by the Italian Statistical Society.

- Marco Polo Ph.D. fellowship to Lancaster University, 2020, University of Bologna.

- Erasmus fellowship to Alexandru Ioan Cuza University, 2017, University of Bologna.

- Award for the best students, 2014-2015, University of Bologna.

Published Articles

1. M. Armillotta, M. Tsagris, and K. Fokianos: "Inference for Network Count Time Series with the R Package PNAR", *The R Journal*, provisionally accepted, 202x. (Link)

2. M. Armillotta: "Two-stage weighted least squares estimator of multivariate conditional mean observation-driven time series models", *Book of short Papers SIS 2023*, Pearson, 2023, pp. 770-775. (Link)

3. M. Armillotta, K. Fokianos, and A. Guizzardi: "Unveiling Venice's hotels competition networks from dynamic pricing digital market", *Journal of the Royal Statistical Society Series A: Statistics in Society*, qnado85, 2023. (Link)

4. M. Armillotta, A. Luati and M. Lupparelli: "Observation-driven models for discrete-valued time series", *Electronic Journal of Statistics*, 16(1): 1393–1433, 2022. (Link)

5. M. Armillotta, K. Fokianos and I. Krikidis: "Generalized Linear Models Network Autoregression", *Network Science*, Springer, 2022, pp. 112–125. (Link)

6. M. Armillotta, A. Luati and M. Lupparelli: "Observation-driven models for storm counts", in: *Book of short Papers SIS 2020*, Pearson, 2020, pp. 863–868. (Link)

7. M. Armillotta, A. Luati and M. Lupparelli: "Stationarity of a general class of observation driven models for discrete valued processes", in: *Book of short Papers SIS 2019*, Pearson, 2019, pp. 31–39. (Link)

Working Papers

1. M. Armillotta: "Two-stage weighted least squares estimator of multivariate discrete-valued observation-driven models", 2023, submitted.

2. M. Armillotta and P. Gorgi: "Pseudo-variance quasi-maximum likelihood estimation of semi-parametric time series models", 2023, submitted. (Link)

3. M. Armillotta and K. Fokianos: "Testing Linearity for Network Autoregressive Models", 2022, revised & resubmitted. (Link)

4. M. Armillotta and K. Fokianos: "Poisson Network Autoregression", 2022, revised & resubmitted. (Link)

Book Chapters

1. M. Armillotta, A. Luati and M. Lupparelli: "An overview of ARMA-like models for count and binary data", *Trends and Challenges in Categorical Data Analysis*, Springer, 2023, pp. 233-274. (Link)

2. M. Armillotta, K. Fokianos and I. Krikidis: "Bootstrapping Network Autoregressive Models for Testing Linearity", *Data Science in Applications*, Springer, 2023, pp. 99–116. (Link)

Software

- M. Tsagris, M. Armillotta and K. Fokianos: "R Package PNAR: Poisson Network Autoregressive Models". (Link)

Conference Presentations

- NBER-NSF Time Series Conference, UQAM, Montréal, Canada, September 2023 (Main session).

- SIS 2023 - Statistical Learning, Sustainability and Impact Evaluation, Marche Polytechnic University, Ancona, Italy, June 2023.

- Statistical Methods on Networks, University of Leipzig, Germany, September 2022 (Invited).

- SIS 2022 - 51st scientific meeting of the Italian Statistical Society, University of Campania "Luigi Vanvitelli", Caserta, Italy, June 2022 (Invited).

- International Symposium on Nonparametric Statistics (ISNPS), Paphos, Cyprus, June 2022 (Invited).

- Challenges for Categorical Data Analysis (CCDA), University of Perugia, Italy, May 2022 (Invited).

- International Conference on Network Science (NetSci-X), Porto, Portugal, February 2022.

- NBER-NSF Time Series Conference, Rice University, Houston, USA, October 2021 (Main session).

- RCEA Time Series Workshop, University of Milano-Bicocca, Milan, Italy, June 2021.

- Data Research Camp, University of Padova, Venice, Italy, July 2019.
- SIS 2019 - Smart Statistics for Smart Applications, Catholic University, Milan, Italy, June 2019 (Invited).

Invited Seminar Presentations

- Department of Economics, University of Crete, Greece, May 2023.
- Department of Statistics and Data Science, Research Center in Mathematics (CIMAT), Mexico, February 2022.
- Department of Econometrics and Data Science, Vrije Universiteit Amsterdam, January 2022.

Professional Society Membership

- Italian Society of Statistics (SIS).
- Italian Biometric Society (SIB).

Skills

- Software: R, Python, Matlab, Gretl, C++, LaTeX, Microsoft Office.
- Languages: English (fluent) and Italian (native).

Teaching Experience

Vrije Universiteit Amsterdam
- Statistics PM. Teacher and Course coordinator.   2023 – present
- Econometrics II. Teacher, 24 hours of lectures.   2022 – 2023

University of Bologna
- Statistics, SECS-S/01. Tutor and Teaching assistant, 30 hours.   2018 – 2019
- Survey and Data Analysis, SECS-S/01. Tutor, 20 hours.   2018 – 2019
- Market Analysis, SECS-S/03. Tutor, 10 hours.   2017 – 2019

Supervising and Mentoring Activities

- Bachelor and Master theses supervision, Vrije Universiteit Amsterdam   9/2022 – present

  - Supervised 9 Master theses as the first supervisor
  - Supervised 4 Bachelor theses as the first supervisor

Referee Activity

- Computational Statistics and Data Analysis

- Software X

October 20, 2023