Anna Gloria Billé

Curriculum Vitae

October 2023

Address: Department of Statistical Sciences, Alma Mater Studiorum - University of Bologna, Via delle Belle Arti, 41, Bologna, Italy.
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Birth: 23/07/1985

Job Positions

2022 - present	Assistant Professor (Ricercatore Tipo B) Department of Statistical Sciences, Alma Mater Studiorum - University of Bologna, Italy
2020 - 2022	Assistant Professor (Ricercatore Tipo A) Department of Statistical Sciences, University of Padua, Italy

Education and Qualifications

2018 - 2020	Post-doc Research Fellow Econometric Methods for Electricity Markets & Optimization Faculty of Economics and Management, Free University of Bozen–Bolzano SSD: SECS-P/05 Econometrics Tutor: Prof. Francesco Ravazzolo
2017 - 2018	Post-doc Research Fellow Copula & Clustering Methods Faculty of Economics and Management, Free University of Bozen–Bolzano SSD: SECS-S/01 Statistics Tutor: Prof. Fabrizio Durante
2016 - 2017	Post-doc Research Fellow National Institute of Statistics (ISTAT)
2015 - 2016	Post-doc Research Fellow Econometric Methods and Models for Microeconometric data Department of Economics and Finance, University of Rome "Tor Vergata" SSD: SECS-P/05 Econometrics Tutor: Prof. Franco Peracchi
2013 - 2014	Expert in Spatial Statistics and Econometrics Teaching Assistant and Tutorship in Economic Statistics Department of Economics, University of Chieti-Pescara "G. D'Annunzio"
2010 - 2013	Ph.D. SSD: SECS-S/03 Economic Statistics Department of Economics, University of Chieti-Pescara "G. D'Annunzio" Ph.D. dissertation title: *Spatial Discrete Choice Models and Health Econometrics* Tutor: Prof. Giuseppe Arbia
2007 - 2009	M.Sc. Environmental Economics (110/110 cum laude) University of Chieti-Pescara "G. D'Annunzio"
2004 - 2007	B.Sc. Economics (110/110 cum laude) University of Chieti-Pescara "G. D'Annunzio"

Visiting Periods

2011/09 - 2011/12	University of Illinois at Urbana-Champaign Regional Economic Applications Laboratory (REAL) Urbana-Champaign, IL, USA. Tutor: Prof. Geoffrey J.D. Hewings.

Publications

ORCID Connecting Research and Researchers: https://orcid.org/0000-0002-6699-6440

List of publications:

Billé, A.G., A. Tomelleri and F. Ravazzolo (2023), "Forecasting Regional GDPs: a Comparison with Spatial Dynamic Panel Data Models", **Spatial Economic Analysis**, Volume 18, Issue 4, pp 530-551. DOI: https://doi.org/10.1080/17421772.2023.2199034.

Billé, A.G. and M., Caporin (2022), "Impact of COVID19 on Financial Returns: A Spatial Dynamic Panel Data Model with Random Effects"., **Journal of Spatial Econometrics**, Volume 3, Number 1. DOI: https://doi.org/10.1007/s43071-022-00025-8.

Billé, A.G., Gianfreda A., Del Grosso F., and Ravazzolo F. (2022), “Forecasting Electricity Prices with Expert, Linear and Non-Linear Models”, **International Journal of Forecasting**, Volume 39, Issue 2, April–June 2023, pp 570-586. DOI: https://doi.org/10.1016/j.ijforecast.2022.01.003.

- The paper has been presented at the 39th International Symposium on Forecasting, University of Thessaloniki, Greece.
- The paper has been carried out in collaboration with the Department of Engineering & Alperia, within the project “Optimization”.

Billé, A.G. and M. Rogna (2021), “The Effect of Weather Conditions on Fertilizer Applications: A Spatial Dynamic Panel Data Analysis”. **Journal of The Royal Statistical Society - Series A**, Volume 185, pp 3–36. DOI: https://doi.org/10.1111/rssa.12709.

Billé, A.G. and S. Leorato (2020), “Partial ML Estimation for Spatial Autoregressive Nonlinear Probit Models with Autoregressive Disturbances”. **Econometric Reviews**, Volume 39, pp 437–475.
The paper has been presented at

- 9th Seminar Jean Paelinck “Non parametric spatial econometrics: theory and empirical issues”, 6-7 October, 2017, Universidad Politecnica de Cartagena, Cartagena, Spain.
- 1st Italian Workshop of Econometrics and Empirical Economics (IWEEE 2018): Panel Data Models and Applications, January 25th-26th, 2018, University of Milano-Bicocca, Milan, Italy.
- XIIth World Conference of the Spatial Econometrics Association (SEA), Webstern Univeristy, Wien - Session 1.1: Estimating and Testing Spatial Models 1
- 2nd Internal Workshop on Economics and Econometrics, Free Univeristy of Bolzano–Bozen, Bolzano
- 39th AISRe Conference, Free University of Bozen–Bolzano & EURAC, Bolzano
- 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CM Statistics 2018) - INVITED SPEAKER
- Department of Industrial and Information Engineering and Economics, University of L’Aquila.

Billé, A.G. and G. Arbia (2019), “Spatial Limited Dependent Variable Models: A Review Focused on Specification, Estimation and Health Economics applications”, **Journal of Economic Surveys**, Volume 33, Issue 5, pp 1531–1554. DOI: https://doi.org/10.1111/joes.12333.

Billé, A.G., Salvioni, C. and R. Benedetti (2018), “Modelling Spatial Regimes in Farms Technologies”, **Journal of Productivity Analysis**, Volume 49, Issue 2–3, pp 173–185. DOI: https://doi.org/10.1007/s11123-018-0529-7.
The paper has been presented at

- 150th Seminar, European Association of Agricultural Economists, Edinburgh, UK.
- 29th International Conference of Agricultural Economists (ICAE), Milan, Italy - Session: Quantitative Methods (5).
- XV European Workshop on Efficiency and Productivity Analysis (EWEPA), 12-15 June, 2017, London, UK.
- Cicle of seminars at Department of Economic Sciences - 25 October, 2017, University of Verona, Verona, Italy.

Billé, A.G., Benedetti, R. and P. Postiglione (2017), “A two–step approach to account for unobserved spatial heterogeneity”, **Spatial Economic Analysis**, Volume 12, Issue 4, Pages 452–471. DOI: 10.1080/17421772.2017.1286373.

- The paper has been presented at 55th European Regional Science Association, Lisbon - Session: Spatial Econometrics and Regional Economic Modelling.

Catania, L. and A.G. Billé (2017), “Dynamic Spatial Autoregressive Models with Autoregressive and Heteroskedastic Disturbances”, **Journal of Applied Econometrics**, Volume 32, Issue 6, September/October 2017, Pages 1178–1196. DOI: jae.2565.

- The paper has been presented at Xth World Conference of the Spatial Econometrics Association (SEA), Rome - Session: Theory.

Billé, A.G. (2014), “Computational Issues in the Estimation of the Spatial Probit Model: A Comparison of Various Estimators”, **The Review of Regional Studies**, Volume 43, pp 131-154.

Books and Chapters

Billé, A.G., Salvioni, C. and F. Vidoli (Book chapter), "Spatial Econometric Modeling of Farm Data", in *Spatial Econometric Methods in Agricultural Economics Using R*, Eds. Benedetti, R., Piersimoni, F. and P. Postiglione, CRC Press/Taylor & Francis Group. - INVITED AUTHOR.

Billé, A.G. (Handbook chapter), "Spatial Autoregressive Nonlinear Models in R: an Empirical Application in Labour Economics", in *Handbook of Reseach Methods and Applications in Empirical Microeconomics*, Eds. Haschimzade, N. and M. Torton, Edward Elgar Publishing Ltd. - INVITED AUTHOR

Submitted Papers

Billé, A.G., Blasques, F. and L. Catania (2023), "Dynamic Spatial Autoregressive Models with Time–varying Spatial Weighting Matrices". Submitted. Preprint at SSRN.

- The paper has been presented at Xth World Conference of the Spatial Econometrics Association (SEA), Rome - Session: Spatial Weighting Matrix.
- The paper has been presented at the Statistical Week, September 10th-13th, Trier, Germany - Young-Academics Mini–Symposium (Philipp Otto): Models for Spatial and Spatiotemporal Data - INVITED SPEAKER

Arbia, G., Billé, A.G. and S. Leorato (2023), "Concentrated Partial ML estimation for Dynamic Spatial Panel Data Probit Models with Fixed Effects". Submitted. Preprint at SSRN.
The paper has been

- presented at the HEalthcare MAnagement & economics Workshop (HEMAW#5), Advances in Applied Econometrics Modeling, Catholic University of the Sacred Heart, Rome, Italy, December, 2019. - *INVITED SPEAKER*
- presented at the 19th Internation Workshop on "Spatial Econometrics and Statistics ", Nantes, France, May 31 and June 1, 2021. - CHAIR AND DISCUSSANT OF THE SESSION *ADVANCES IN METHODOLOGY 2*
- presented at the International Association for Applied Econometrics (IAAE2021), Econometric Institute at Erasmus School of Economics in Rotterdam, the Netherlands, June 22-25, 2021. - CHAIR OF THE COMMUNICATION SESSION: *ECONOMETRIC METHODOLOGY I*.

Billé, A.G. and M. Rogna (2023) "Accounting for Spillovers Effects and Temporal Dynamics on the Impact of Renewables on Labour Force: A World Perspective". Submitted. Preprint at SSRN.

A. Tomelleri and A.G. Billé (2023), "Do Micro-Enterprises Ask for Local Support Measures? Evidence After the COVID-19 Pandemic". Submitted. Preprint at SSRN.

Working Papers

Billé, A.G., "Optimal GMM Estimator for Spatial Autoregressive Nonlinear Binary Models".

Billé, A.G., Ferrante, M.R. and N. Salvati, "Small Area Estimation under Several Spatial Specifications".

Billé, A.G., R. Benedetti and P. Postiglione, "Dynamic Spatial Panel Data Models with Time-varying Spatio-temporal Regimes".

Bernardi E., R. Bernardini Papalia, R. and A.G. Billé "Spatial or Time first differencing in Exsplosive Spatial Dynamic Panel Data Models?".

Billé, A.G. and D. Spinelli, "Partial MLE for spatial binary probit models: the pmlespprobit package".

Thesis Supervision

Alessio Tomelleri, Free University of Bolzano-Bozen (PhD, Chapter 3). "Forecasting Regional GDPs: a Comparison with Spatial Dynamic Panel Data Models".

Counseling Activities & Cooperations

10/2020 - 12/2020	International Fund for Agricultural Development (IFAD – FAO) Research & Impact Assessment Division (RIA) – Strategy and Knowledge Department (SKD) Innovation Challenge Proposal Leveraging Artificial Intelligence and Big Data for IFAD2.0 Project Title: Predicting Projects Performance

Courses and schools

04/2016 - 05/2016	**University of Rome Tor Vergata & EIEF** Dynamic Factor Models - Prof. Marco Lippi State–Space Models - Prof. Tommaso Proietti Bayesian Time Series Econometrics - Prof. Dimitris Korobilis High-Dimensional Covariance Estimation with Applications - Prof. Mohsen Pourahmadi
03/2015 - 04/2015	**EIEF** Advanced Econometrics - Prof. Alberto Holly Bootstrap and Asymptotic Refinements - Prof. Samantha Leorato Finite Mixture Models - Prof. Roberto Rocci
09/2011 - 12/2011	**University of Illinois at Urbana-Champaign**, Economics Department & Dep. of Agricultural and Consumer Economics: Econometrics II - Prof. Anil Bera Applied Spatial Econometrics - Prof. Kathy Baylis
01/2010 - 11/2010	**University of Bologna**, Department of Statistical Sciences PhD Program in *Statistical Methodology for Scientific Research*: Resampling methods for experimental research - Prof. Rodolfo Rosa Statistical Inference - Prof. Patrizia Agati, Daniela Giovanna Caló, Paola Monari, Gabriele Soffritti Bayesian Inference - Prof. Daniela Cocchi, Brunero Liseo, Andrea Tancredi, Fedele Greco Micro Data Mining - Prof. Furio Camillo Time Series Econometrics - Prof. Giuseppe Cavaliere, Luca Fanelli, Alessandra Luati, Attilio Gardini Markov Chain Monte Carlo - Prof. Rodolfo Rosa
07/2010	**Summer School of Modern Methods in Biostatistics and Epidemiology**, Treviso, Italy: Biostatistics I - Prof. Marcello Pagano Principles of Epidemiology - Prof. Johanna Adami Introduction to Stata
02/2010	**University of Rome "Roma Tre"**, Department of Economics PhD program in *Statistical Methods for the Economy and the Enterprise*: Nonparametric Statistics - Prof. Pier Luigi Conti Bayesian Networks - Prof. Julia Mortera
05/2009 - 06/2009	**Spatial Econometrics Advanced Institute - SEAI09**, University of Rome "La Sapienza": Spatial Statistics - Prof. Giuseppe Arbia Spatial Economics - Prof. Jean Paelink Spatial Econometrics I - Prof. Harry Kelejian Spatial Econometrics II - Prof. Ingmar Prucha Spatial Panel Data Econometrics - Prof. Badi Baltagi R Laboratory - Prof. Gianfranco Piras

Teaching

As **Senior Assistant Professor**

2021 - present	BIG DATA ANALYTICS (30/30 hours) - course owner
2021 - present	ECONOMIC STATISTICS AND MARKET ANALYSIS (30/30 hours) - course owner

As **Junior Assistant Professor**

2019 - 2020	STATISTICS: BUSINESS APPLICATIONS (45/45 hours) - course owner
2020 - 2021	BUSINESS STATISTICS (40/64 hours) - course owner
2020 - 2021	HOW TO MEASURE ECONOMICS AND BUSINESS (12/64 hours)

As **Teaching Assistant**

2019 - 2020	Econometrics (with R) for undergraduate students Tutor: Francesco Ravazzolo.
2018 - 2019	Econometrics (with R) for undergraduate students Tutor: Francesco Ravazzolo.
2018 - 2019	Statistics (with R) for undergraduate students Tutor: Davide Ferrari.
2015 - 2016	Econometrics (with Gretl) for undergraduate students Tutor: Samantha Leorato.
2013 - 2014	Economic Statistics (Sampling Designs - with R) for master students: Tutor: Roberto Benedetti.
2010 - 2012	Economic Statistics (Hypothsis Testing and Inference) for master students Tutor: Giuseppe Arbia.
2010 - 2012	Statistics (Descriptive and Probability) for undergraduate students Tutor: Giuseppe Arbia.

Additional Accademic Responsibilities

2020 - 2021 Referent for English language (B2) Department of Statistical Sciences School of Science UNIPD

Conferences & Workshops

06/2021	Econometric Institute at Erasmus School of Economics in Rotterdam	International Association for Applied Econometrics (IAAE2021)
05/2021	University of Nantes	19th Internation Workshop on Spatial Econometrics and Statistics
12/2019	Catholic University of the Sacred Heart	HEMAW#5, Advances in Applied Econometrics Modeling
09/2019	Univeristy of Trier	Statistical Week: Models for Spatial and Spatiotemporal Data
06/2019	University of Thessaloniki	39th International Symposium on Forecasting
12/2018	University of Pisa	11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CM Statistics 2018) - INVITED SPEAKER
09/2018	Free Univeristy of Bozen–Bolzano & EURAC	39th AISRe Conference
06/2018	Free University of Bozen–Bolzano	2nd Internal Workshop on Economics and Econometrics
06/2018	Webster University	XIIth World Conference of the Spatial Econometrics Association (SEA)
01/2018	University of Milan Bicocca	1st Italian Workshop of Econometrics and Empirical Economics (IWEEE 2018)
12/2017	Free University of Bozen–Bolzano	Workshop on Asset Allocation under Parameter Uncertainty
06/2017	Free University of Bozen–Bolzano	1st Internal Workshop on Economics and Econometrics
06/2017	Loughborough University, London	XV European Workshop on Efficiency and Productivity Analysis (EWEPA)
07/2016	University of Pisa	Workshop on Recent Advances in Quantile and M-quantile Regression
06/2016	CNR-IRCrES, Rome	International Workshop on Computational Economics and Econometrics
06/2016	Catholic University of Rome	XIIth World Conference of the Spatial Econometrics Association (SEA) (served as discussant for sessions "Theory" & "Spatial Weighting Matrix")
08/2015	University of Lisbon	55th European Regional Science Association (ERSA) Congress

Referee Activity

Served as referee for: Computational Statistics and Data Analysis, International Journal of Computational Economics and Econometrics, Regional Science and Urban Economics, Statistics and Its Interface, Networks and Spatial Economics, Spatial Economic Analysis, Journal of Econometrics, The Annals of Applied Statistics, Journal of Agricultural Economics, Statistical Methods and Applications, Environmental & Resource Economics, Journal of Business & Economic Statistics, Journal of

Spatial Econometrics, Plus One, Geographical Analysis, Energy Economics, Biometrical Journal, AStA Advances in Statistical Analysis.

Research Fields

Statistics & Econometrics: Spatial & Spatio-Temporal Modelling, Estimation Methods, Simultaneous Linear/Nonlinear Equation Models (Limited Dependent Variables), Model Specification, Forecasting, Applied Econometrics.

Machine Learning & Data Analysis: Computational Statistics/Econometrics, Optimization & Algorithms, Clustering Methods, Big Data.

Computer Skills

R, MatLab, Python, GeoDa, ArcGis, LaTeX, Gretl, SPSS, Windows.

Language

Italian : mother tongue
English : IELTS Certificate (2009).
Deutsch : A.1.1; Internal Exam at Free Univerisity of Bozen (2018).

References

Professor Samantha Leorato	Professor of Statistics
	University of Milan, Milan, Italy
	Email: samantha.leorato@unimi.it
Professor Giuseppe Arbia	Professor of Economic Statistics
	Catholic University of the Sacred Heart, Rome, Italy
	Email: giuseppe.arbia@unicatt.it
Professor Francesco Ravazzolo	Professor of Econometrics
	Free University of Bolzano-Bozen, Bolzano, Italy
	Email: Francesco.Ravazzolo@unibz.it
Professor Franco Peracchi	Professor of Econometrics
	University of Rome “Tor Vergata”, Rome, Italy
	Email: franco.peracchi@uniroma2.it
Professor Tommaso Proietti	Professor of Economic Statistics
	University of Rome “Tor Vergata”, Rome, Italy
	Email: tommaso.proietti@uniroma2.it