Gery Andrés Díaz Rubio

Statistician · Econometrician · Researcher · University Lecturer

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Institutional profiles: University of Bologna | Free University of Bozen–Bolzano

Current affiliations: Istituto Nazionale di Fisica Nucleare (INFN), Ferrara; University of Bologna; Free University of Bozen–Bolzano, Italy.

Profile

Postdoctoral researcher at INFN Ferrara with a PhD in Statistical Sciences and university teaching activity in statistics and econometrics. Research interests include statistical model comparison and model selection under misspecification, multivariate time series and forecasting, finite-sample evaluation, robust and computational statistics, and statistical methodology for cosmological data. Applied work spans economic and financial data, sequential sports and panel data, simulation-based analysis, reproducible statistical computing, and quantitative methodological support.

Research Interests

Statistical Model Comparison and Selection under Misspecification · *Multivariate Time Series and Forecasting* · *Finite-Sample Behaviour* · *Robust and Computational Statistics* · *Statistical Methods for Cosmological Data* · *Applied Econometrics* · *Sequential Sports and Panel Data Analysis*

Research Appointments

2026/07–Present **Postdoctoral Researcher – INFN, Sezione di Ferrara**
Istituto Nazionale di Fisica Nucleare. Project: *Development of advanced statistical tools for analysis and interpretation of cosmological data.* Current activity concerns statistical methodology for complex scientific data, with emphasis on model comparison, computational validation, and reproducible numerical analysis.

2023/01–2025/12 **Research Fellow – University of Bologna**
Department of Statistical Sciences "Paolo Fortunati". Project: *Dynamic modelling and statistical analysis of Italian football league data.*

- Construction, validation, and reconciliation of minute-by-minute analytical panels from commentary and play-by-play football data.
- Statistical modelling of panel, sequential play-by-play, and match-level data; development of robust model-selection procedures for generalized linear models, including RGIC_α.
- Large-scale Monte Carlo simulation, bootstrap inference, diagnostics, out-of-sample validation, and reproducible R workflows, including parallel and SLURM-based server execution.

Education

2022 **PhD in Statistical Sciences – University of Bologna**
Thesis: *Model selection and the vectorial Misspecification-Resistant Information Criterion in multivariate time series.* Advisors: Simone Giannerini and Greta Goracci. Thesis focus: model selection under misspecification for multivariate time series, with emphasis on finite-sample behaviour, prediction and forecasting performance, and applications including VAR/VARX specifications. DOI: 10.48676/unibo/amsdottorato/10488.

2016 **MSc in Economics and Economic Policy (LM-56) – University of Bologna**
Economic Analysis and Macroeconometrics. Dissertation: *Dual Structures: Two Models for the Peruvian Economy.* Political-economy analysis of Peru and a structural VAR study of the monetary-policy transmission mechanism. Final grade: 110/110.

2012 **BSc in Economics (L-33) – University of Florence**
Financial Econometrics. Dissertation: *The standard CAPM and the GARCH(1,1) model in the Peruvian Stock Market.* Empirical CAPM analysis and GARCH modelling of Peruvian financial-market data.

Publications and Research Outputs

Peer-Reviewed Journal Article

P1 Angelini, F.; Castellani, M.; **Díaz Rubio, G.A.**; Giannerini, S.; Goracci, G. (2026). *Strategic Play and Home Advantage: Coaches' Tactical Impact in Serie A. Journal of Quantitative Analysis in Sports.* DOI: 10.1515/jqas-2025-0113.

Refereed Conference Proceeding

CP1 **Díaz Rubio, G.A.**; Giannerini, S.; Goracci, G. (2021). *On the asymptotic mean-squared prediction error for multivariate time series.* In *Proceedings of the 50th Scientific Meeting of the Italian Statistical Society*, Vol. 2, pp. 1599–1604. ISBN 9788891927361. Proceedings.

Manuscripts Under Review and Revision

M1 Castellani, M.; **Díaz Rubio, G.A.**; Giannerini, S.; Goracci, G. (2026). *Robust model selection for generalized linear models with an application to state-dependent event stream football data.* In revision. ICORS 2025 abstract.

M2 Visentin, M.; Tuan, A.; Giannerini, S.; **Díaz Rubio, G.A.** (2026). *Between Flow and Satiation: The Temporal Impact of Emotions in Online Video Gamers' Reviews on Daily Active Players.* Under review.

M3 **Díaz Rubio, G.A.**; Giannerini, S.; Goracci, G. (2025). *The Vectorial Misspecification-Resistant Information Criterion.* In revision. Preprint: arXiv:2202.09225.

Working Papers

W1 **Díaz Rubio, G.A.** (2026). *Toward robust penalized semiparametric state-dependent varying-coefficient logistic models for football in-play prediction.* Working paper.

W2 **Díaz Rubio, G.A.** (2022). *Model Selection via Information and Prediction Criteria: A Survey.* Working paper.

Doctoral Thesis

TH **Díaz Rubio, G.A.** (2022). *Model selection and the vectorial Misspecification-Resistant Information Criterion in multivariate time series.* University of Bologna. DOI · Repository.

University Teaching

Current and Recurring Appointments

2022/23–Present **Adjunct Professor – University of Bologna**
Department of Statistical Sciences "Paolo Fortunati". Analisi delle Serie Storiche per la Finanza e le Assicurazioni, BSc in Statistica, Finanza e Assicurazione. Recurring responsibility for time-series methods and applications. Appointment renewed for A.Y. 2026/27.

2025/26–Present **Teaching Assistant – University of Bologna**
Department of Pharmacy and Biotechnology. Statistical Methods for Genomics, BSc in Genomics; English-language teaching. Appointment renewed for A.Y. 2026/27.

2025/26–Present **Lecture Assistant – Free University of Bozen–Bolzano**
Faculty of Economics and Management. Econometrics for Economics, BSc in Economics and Management; English-language teaching. Appointment renewed for A.Y. 2026/27.

Selected Previous Teaching

2024/25–2025/26 **Adjunct Professor – Free University of Bozen–Bolzano**
Faculty of Economics and Management. Econometrics / Econometria, undergraduate programmes in Economics, Politics and Ethics and related economics curricula; teaching in English and Italian.

2021/22–2024/25 **Teaching Assistant – University of Bologna**
Department of Pharmacy and Biotechnology: Introductory Statistics, BSc in Genomics; and *Department of Statistical Sciences "Paolo Fortunati": Stochastic Processes*, MSc in Statistical, Financial and Actuarial Sciences.

2014–2023 **Selected Teaching and Assistance – University of Bologna**
Teaching activity across the Department of Economics, Department of Political and Social Sciences, Department of Statistical Sciences "Paolo Fortunati", and Department of Pharmacy and Biotechnology. Selected courses included Probability I–II, Probability, Statistics, Statistical Methods for Financial Markets, Statistical Models for Market Research, Advanced Micro Econometrics, Econometrics 1 & 3, Advanced Macro Econometrics, Macroeconomics, Economics, Financial Markets and Institutions, and Data Mining and Corporate Decisions. Teaching was delivered across BSc, MSc, and PhD programmes in Italian and English.

2025 **Guest Lecturer – Free University of Bozen–Bolzano**
Studium Generale (university-wide interdisciplinary programme). *Analisi delle Serie Storiche con R Markdown*, within *Analisi Statistica ed Econometrica con R.*

Selected Research Presentations

Conference Presentations as Speaker

2025 **Díaz Rubio, G.A.**; Castellani, M.; Giannerini, S.; Goracci, G. *Robust model selection for logistic regression with an application to sport analytics.* International Conference on Robust Statistics (ICORS), Joint Research Centre of the European Commission, Stresa.

2023 **Díaz Rubio, G.A.**; Angelini, F.; Castellani, M.; Giannerini, S.; Goracci, G. *On Home Advantage with In-Game Variables from Commentary Data in the Italian Serie A.* EAI Intetain, IMT School for Advanced Studies Lucca.

2022 **Díaz Rubio, G.A.**; Giannerini, S.; Goracci, G. *A Multivariate Extension of the Misspecification-Resistant Information Criterion.* 3rd Italian Workshop of Econometrics and Empirical Economics (IWEEE), Rimini.

2021 **Díaz Rubio, G.A.**; Giannerini, S.; Goracci, G. *On the asymptotic mean-squared prediction error for multivariate time series.* 50th Scientific Meeting of the Italian Statistical Society, Pisa.

Seminar Presentations as Speaker

2025 **Díaz Rubio, G.A.** *Robust model selection for generalized linear models with an application to state-dependent sequential football data.* Free University of Bozen–Bolzano.

2021 **Díaz Rubio, G.A.** *The Vectorial Misspecification-Resistant Information Criterion and Model Selection with Multivariate Time Series.* Department of Statistical Sciences "Paolo Fortunati", University of Bologna.

2019 **Díaz Rubio, G.A.** *Model Selection with Nonparametric Methods for Nonlinear Time Series.* Department of Economics, Universidad Nacional de Cuyo, Mendoza, Argentina.

Supervision and Selected Advanced Training

BSc Thesis Supervision – University of Bologna

2025 C. F. – *Modelli VAR: fondamenti teorici, limiti e applicazioni empiriche in R.*

2026 M. D.F. – *Financial sentiment analysis e modelli di serie temporali: un confronto tra ARIMA e ARIMAX sull'indice S&P 500.*

2026 V. M. – *Analisi della volatilità condizionata dell'indice S&P500 e del Bitcoin mediante modelli GARCH.*

2026 A. V. – *Ongoing BSc thesis supervision.*

Selected Advanced Training

2025 School on Robust Statistics, ICORS, Joint Research Centre of the European Commission.

2023 Bolzano–Waseda Workshop on Statistics and Time Series Analysis.

2022 IASC–LARS–ISI School on Computational Statistics and Data Science: *Time Series Robust Methods: Time and Frequency Domains.*

2019 Italian Econometric Society (SIdE) Summer School: *Principles, Ideas and Theory in Econometric Time Series*, taught by Søren Johansen and Anders Rahbek.

Academic Service and Professional Memberships

Refereeing: *Structural Change and Economic Dynamics* (2018).

Professional memberships: Italian Econometric Society; International Association for Statistical Computing (IASC); Bernoulli Society; Institute of Mathematical Statistics; Italian Statistical Society.

Languages and Technical Skills

Languages	Spanish (first language); Italian (full professional proficiency, C1; CELI 3 certificate, B2); English (full professional proficiency, C1; FCE certificate, B2).
Statistical computing	R, Python, Stata, MATLAB, Julia, SAS, Gretl, EViews, Wolfram Mathematica, Jamovi, Prism.
Scientific workflows	LaTeX, R Markdown, Visual Studio Code, reproducible statistical workflows, Monte Carlo simulation, bootstrap methods, parallel computing, HPC/server workflows, SLURM batch execution.
Business / web tools	ERP (SAM 4.2), Microsoft Dynamics CRM, WordPress.

Applied Analytical and Professional Experience

2017 — **Controller – Ocem Energy Technology (Arethè & Cocchi Technology), Bologna**
Analysis and reorganization of financial and management-control data across business units; quantitative reporting and decision support for controlling activities; support for business-process redesign and alignment between operating processes and ERP systems.

2011–2018 — **Independent Quantitative Tutoring and Research Support – Bologna**
Tutorials and intensive courses in statistical/econometric software; support for data management, statistical analysis, modelling, forecasting, and applied quantitative projects for university students, professionals, and researchers.

Selected Public Engagement

2019 **Díaz Rubio, G.A.**; with R. Scazzieri. *Economic Crises: Structural Conditions and Institutional Mechanisms.* Department of Philosophy and Communication, University of Bologna.

2017 **Díaz Rubio, G.A.** *An Introduction to Game Theory: Conflicts and Institutions.* Department of Philosophy and Communication, University of Bologna.

2016 **Díaz Rubio, G.A.** *The "Economic Miracle" of Fujimori's Administration (1990–2000).* Zonarelli Centre, Bologna.