Rosario Maggistro

Curriculum Vitae

Personal Information

Name	Rosario Maggistro
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ORCID	`https://orcid.org/0000-0002-1448-3782`

Current Position

Dec 1, 2023	**Associate Professor in Mathematical Methods for Economics**, *Department of Economic, Business, Mathematical and Statistical Sciences (DEAMS), Università di Trieste*, Italy

Previous Positions

Oct. 2021 – Nov. 2023	Senior Assistant Professor (RtdB) in Mathematical Methods for Economics, Department of Economic, Business, Mathematical and Statistical Sciences (DEAMS), Università di Trieste, Italy
Oct. 2020 – Oct. 2023	Cultore della materia in Ricerca Operativa, Department of Management, Università Ca' Foscari Venezia, Italy
Oct. 2020– Sept. 2021	Assistant Professor (RtdA) in Mathematical Methods for Economics, Department of Economic, Business, Mathematical and Statistical Sciences (DEAMS), Università di Trieste, Trieste, Italy
2018 – 2020	Postdoctoral Researcher, Department of Management, Università Ca' Foscari Venezia.
2018 – 2019	Internship, Save S.p.a Venice Airport, Venezia, Air traffic data analysis and predictive modeling
2017– 2018	Research Assistant, Department of Mathematical Sciences, Politecnico di Torino.

Visiting

30 Nov. - 2 Dec 2022	Visiting Professor, Department of Mathematics, University of Trento, Italy. Invited by Prof. Fabio Bagagiolo
1 June - 31 July 2021	Visiting Professor, Artificial Intelligence for Business Research Centre, SKEMA Business School Sophia Antipolis, Antibes, France. Invited by Prof. Davide La Torre
2 May - 17 June 2017	Visiting Research Fellow, Department of Automatic Control, University of Lund, Lund, Sweden. Advisor: Giacomo Como
18 Jan.- 22 Mar. 2016	Visiting Research Fellow, Department of Automatic Control and Systems Engineering, University of Sheffield, UK. Supervisor: Dario Bauso

Qualifications

National Scientific Qualification as Associate Professor in Sector 13/D4, *Mathematical Methods of Economics, Finance and Actuarial Sciences*, Validity period: 01/06/2022 al 01/06/2033

Qualification aux fonctions de Maître de conférences, *Section 25: Mathématiques*, Validity period: 30/01/2018 – 31/12/2022, (French system)

Qualification aux fonctions de Maître de conférences, *Section 26: Mathématiques appliquées et applications des mathématiques*, Validity period: 07/02/2018 – 31/12/2022, (French system)

Education

Nov. 2013– Jan. 2017 Ph.D in Mathematics, Università degli Studi di Trento, Italy. Ph.D Thesis: *On some optimal control problems on networks, stratified domains, and controllability of motion in fluids.* Ph.D Defence on June 21, 2017. Awarded cum laude.

Oct. 2011– Oct. 2013 Master degree in Mathematics, Università degli Studi di Messina, Italy. Grade: 110/110 cum laude. Thesis: *Un approccio variazionale relativo a problemi di equilibrio economico competitivo.*

Oct. 2008– Oct. 2011 Bachelor degree in Mathematics, Università degli Studi di Messina, Italy. Grade: 110/110 cum laude

Oct. 2008– Oct. 2011 Percorso di Eccellenza nelle Scienze, Università degli Studi di Messina, Italy

Funded projects

2023 Participant of the MIUR-PRIN 2022 Project: "Building resilience to the emerging risks: the social impact of the financial and insurance market dynamics", grant 2022FWZ2CR. Scientific Responsible for Trieste Research Unit: Pietro Millossovich. National Scientific Coordinator: Emilio Russo, Università della Calabria.

2023 Participant to the International Research Project "A Biologically Inspired Perspective in Longevity Risk Management", funded by SOA (Society of Actuaries) after a peer-to-peer competition, for the period April 2023 - March 2024, as a result of the 2023 SOA-CAS individual grant competition.

2019 Participant to the research project "Smart Cities: il contributo del Data Science per la qualità e sostenibilità delle esperienze di visita", supported by POR FSE 2014-2020 - CUP H76C18000250005, Regione del Veneto. PI: Prof. Raffaele Pesenti.

2017 Participant to the research project "Mean Field Mathematical Models for Excursionists Flow in a Historic City Center" funded by G.N.A.M.P.A. for the period March 2017 - March 2018. PI: F. Bagagiolo (Università di Trento, IT)

2016 Participant to the research project "Controllability of ordinary differential systems with hysteresis and application to control of microswimmers" funded by G.N.A.M.P.A. for the period March 2016 - March 2017. PI: Marta Zoppello (Università di Trento, IT)

May 2015 - Feb. 2017 Participant to the research project "OptHySYS - Optimization techniques for hybrid dynamical systems: from theory to applications", funded as part of the Strategic Plan 2014-2016 of the University of Trento, Italy

Honors and Awards

2023 I.N.D.A.M. (Istituto Nazionale di Alta Matematica) financial support for the participation to the conference "XLVII AMASES Conference 2023", Università di Milano-Bicocca, Italy. Sept. 20-22, 2023

2022 I.N.D.A.M. financial support for the partecipation to the conference "XLVI AMASES Conference 2022", Università degli Studi di Palermo, Italy. Sept. 22-24, 2022

2020 I.N.D.A.M. financial support for the partecipation to the conference "SIMAI 20201+2021", Università degli Studi di Parma, Italy. Aug. 30 - Sept. 3, 2021

2018 I.N.D.A.M. financial support for the partecipation to the conference "Optimal Control and Mean Field Games", Università degli Studi di Pavia, Italy. Sept. 19-21, 2018

2017 I.N.D.A.M. financial support for the partecipation to the conference "Control of state constrained dynamical systems", Università degli Studi di Padova, Italy. Sept. 25-29, 2017

2013–2016 Ph.D Fellowship from the University of Trento, Italy

Memberships

May 2020 - today Member of the NOIS (Network Organization Innovation and Strategy) Research center (Department of Management, Università Ca' Foscari Venezia)

2019 - today Associate Member, Italian Association of Mathematics Applied to Economics and Social Sciences (AMASES)

2014-today Associate Member, Italian Group for Mathematical Analysis, Probability, and their applications (G.N.A.M.P.A)

2014 - 2017 Member of the Research Group on Dynamical Systems and Control Theory (University of Trento).

Organizational and Institutional Activities

2022 - Member of the PhD Board in Circular Economy - from cycle 38 on-wards - University of Trieste.

2021 - Member of the Research Commission for the Mathematical Area of the Department of Economic, Business, Mathematical and Statistical Sciences "Bruno de Finetti", Università di Trieste.

2023 - Member of the Centro Interdipartimentale per la Ricerca Didattica - CIRD - dell' Università di Trieste.

2023 - 2024 Membro del Comitato organizzativo per il Centenario DEAMS.

2023 Organizer of the "Workshop in memory of Ermanno Pitacco", November 24, 2023

2024 Organizer of the section "Recent Developments in Finance and Insurance" in 48th Annual Meeting of the AMASES, Ischia (Italy), September 5-7, 2024

2021 Organizer of the section "Interactions and complexity in social dynamics" in 45th Annual Meeting of the AMASES, September 13-18, 2021

2019 Co-Chair of the section "Optimal Control IV" in 2019 IEEE 58th Conference on Decision and Control (CDC), Nice, December 11-13, 2019

Other activities

Feb. - March 2022 Attendance to the course: Tras-formazione: Capitalizzare, sviluppare, rinforzare, innovare il patrimonio delle competenze didattiche UniTS, 15h

Associate Editor for *The Journal of Risk Management and Insurance* (ISSN: 0859-3604), *Optimal Control Applications and Methods* (ISSN: 0143-2087) and *Discussiones Mathematicae. Differential Inclusions, Control and Optimization* (ISSN: 1509-9407).

Reviewer for IEEE Transaction on Control of Network Systems (TCNS), IEEE Transaction on Automatic Control (TAC), IEEE - ACC Proceedings, IEEE Control Systems Letters (L-CSS), IEEE Transactions on Intelligent Transportation Systems (TITS), IEEE - CDC Proceedings, European Journal of Operational Research (EJOR), Journal of Optimization Theory and Applications (JOTA), Mathematical Reviews, Risks, Mathematics, Journal of Computational and Applied Mathematics, Decisions in Economics and Finance.

Terza Missione

Feb. 2024 Docente nel Progetto “Oriéntati a cambiare il mondo, per un futuro sostenibile (PNRR 2023-24)”, Attività di coinvolgimento e interazione con il mondo della scuola - Università degli Studi di Trieste - Dipartimento di Scienze Economiche, Aziendali, Matematiche e Statistiche (DEAMS) “Bruno De Finetti”, Modulo: “Sostenibilità economica, responsabilità sociale e sostenibilità in campo assicurativo-finanziario ”, 12 ore

Teaching Activities

2024 - **Lecturer**, *Advanced Actuarial Models*, University of Trieste, PhD in Circular Economy

2024 - **Lecturer**, *Advanced Topics in Optimization*, University of Trieste, PhD in Circular Economy

2022 – **Lecturer**, *Matematica Finanziaria*, University of Trieste, BSc in Statistics

2024 – **Lecturer**, *Matematica per l'Economia*, University of Trieste, BSc in Economics

2022 – 2024 **Lecturer**, *Financial Mathematics*, University of Trieste, BSc in Economics

2020 – **Lecturer**, *Matematica per l'Economia e la Statistica - corso progredito*, University of Trieste, BSc in Statistics

2020 – 2023 **Lecturer**, *Mathematics*, University of Trieste , BSc in Economics

2020 – 2022 **Lecturer**, *Calcolo delle Probabilità*, University of Trieste , BSc in Statistics

2020 – 2021 **Lecturer**, *Mathematics for management studies* , University Ca' Foscari Venezia, PhD in Management

2020 – 2021 **Lecturer**, *Principles of Mathematics*, University Ca' Foscari Venezia, MSc in Science and Technology of Bio and Nanomaterials

2019 – 2020 **Lecturer**, *Matematica 1*, University Ca' Foscari Venezia, BSc in Economics and Business

2019 – 2020 **Teaching Assistant**, *Risk and Uncertainty*, University Ca' Foscari Venezia, BSc in Business Administration and Management

2017 – 2018 **Teaching Assistant**, *Mathematical Analysis II*, Politecnico di Torino, BSc in Engineering

2015 – 2016 **Teaching Assistant**, *Analisi Matematica I*, University of Trento, BSc in Mathematics

2014 – 2015 **Teaching Assistant**, *Geometria I*, University of Trento, BSc in Mathematics

Committees

Participation in examination committees for teaching courses: Mathematics (015EC), Calcolo delle Probabilità (012EC), Matematica per l'Economia e la Statistica - Corso Progredito (054EC), Matematica Finanziaria (051EC), Matematica per l'economia (032EC), Finanza Matematica (104EC), Financial Mathematics (045EC), Matematica Attuariale delle Assicurazioni Vita (106EC) at DEAMS.

Member of the Bachelor and Master Degree Committees at DEAMS.

Participation in examination committees for teaching courses: Matematica I, Mathematical Analysis II, Analisi Matematica A, Geometria I at Università Ca' Foscari Venezia, Politecnico di Torino and Università di Trento, respectively.

Co-Supervisor of 1 Master's degree thesis in Mathematics, 1 Bachelor's degree thesis in Mathematics and 2 Bachelor's degree in Statistics. The details (title and academic year) are given below:

- Coperture assicurative per calamità naturali: uno studio comparativo tra l'Europa e l'Italia (A.Y. 2023-2024)
- Anatocismo nei piani di ammortamento standardizzati tradizionali: legittimità del modello alla francese (A.Y. 2022-2023)
- Ottime strategie di investimento e di ripartizione intergenerazionale del rischio per sistemi pensionistici ibridi (A.Y. 2021-2022)
- Application of the optimal stochastic control theory to an investment-consumption problem (A.Y. 2020-2021)

Articles in journal

[1] D. La Torre, R. Maggistro, S. Marsiglio: Transboundary pollution control under evolving social norms: a mean-field approach, Decision. Econ. Finan., (2024) https://doi.org/10.1007/s10203-024-00459-9

[2] La Torre, D., Maggistro, Multi-agent dynamic financial portfolio management: a differential game approach, Ann. Oper. Res., (2024) https://doi.org/10.1007/s10479-024-06070-w

[3] R. Maggistro, M. Marino, A. Martire: A dynamic game approach for optimal consumption, investment and life insurance problem, Ann. Oper. Res., (2024) https://doi.org/10.1007/s10479-024-05847-3

[4] A. R. Bacinello, R. Maggistro, I. Zoccolan: The interaction between variable annuity providers and their customers under a dynamic approach, Decision. Econ. Finan., (2024) https://doi.org/10.1007/s10203-023-00430-0

[5] R. Maggistro, M. Marino, R. Pelessoni, L. Picech: Designing amortization plans by fairness, Decision. Econ. Finan., (2024) https://doi.org/10.1007/s10203-023-00424-y

[6] A.R. Bacinello, R. Maggistro, I. Zoccolan: Risk-neutral valuation of GLWB riders in variable annuities, Insur. Math. Econ., 114, 1-14 (2024)

[7] J. Andria, R. Maggistro, R. Pesenti: Sustainable Management of Tourist Flow Networks: A Mean Field Model, J. Optim. Theory App., 196, 730-761 (2023)

[8] R. Maggistro, P. Pellizzari, E. Sartori, M. Tolotti: Dangerous tangents: an application of Γ-convergence to the control of dynamical systems, Decision. Econ. Finan., 45, 451–480 (2022)

[9] D. La Torre, D. Liuzzi, R. Maggistro, S. Marsiglio: Mobility choices and strategic interactions in a two-group macroeconomic-epidemiological model, Dyn. Games Appl., 12, pp. 110-132 (2022)

[10] G. Como, R. Maggistro: Distributed Dynamic Pricing of Multiscale Transportation Networks, IEEE Trans. Automat. Control, 67(4), pp. 1625-1638 (2022)

[11] M. Kaucic, G. Valentinuz, R. Maggistro, M. Morganti: Enhanced Index-Tracking Strategies Based on Systemic Financial Shocks: A Comparison of Countries Versus Sectors Investments, IJEFM, 9(6), pp. 260-270 (2021)

[12] F. Bagagiolo, R. Maggistro, R. Pesenti: Origin-to-destination network flow with path preferences and velocity controls: a mean field game-like approach, J. Dyn. Games, 8(4), pp. 359-380, (2021)

[13] F. Bagagiolo, R. Maggistro, M. Zoppello: A hybrid differential game with switching thermostatic-type dynamics and cost, Minimax Theory Appl., 5(2), 151–180, (2020)

[14] D. Bauso, R. Maggistro, R. Pesenti: Robust Sub-optimality of Linear-Saturated Control via Quadratic Zero-Sum Differential Games, J. Optim. Theory Appl., 184, 1109–1125, (2020)

[15] F. Bagagiolo, R. Maggistro, M. Zoppello: A differential game with exit costs, Dyn. Games Appl., 10(2), 297-327, (2020)

[16] R. Maggistro, M. Zoppello: Optimal motion of a scallop: some case studies, IEEE Control System Letters, 3(4), 841-846, (2019)

[17] F. Bagagiolo, S. Faggian, R. Maggistro, R. Pesenti: Optimal control of the mean field game equilibrium for a pedestrian tourists' flow model, Netw. Spat. Econ. (2019), DOI 10.1007/s11067-019-09475-4

[18] F. Bagagiolo, R. Maggistro: Hybrid Thermostatic Approximations of Junctions for some Optimal Control Problems on Networks, SIAM J. Control Optim., 57(4), 2415-2442, (2019)

[19] F. Bagagiolo, D. Bauso, R. Maggistro, M. Zoppello: Game Theoretic Decentralized Feedback Controls in Markov Jump Processes, J. Optim. Theory Appl., 173(2), 704-726, (2017)

[20] F. Bagagiolo, R. Maggistro, M. Zoppello: Swimming by Switching, Meccanica, (2017), DOI 10.1007/s11012-017-0620-6.

Conference Proceedings / Book Chapters

[21] A. R. Bacinello, R. Maggistro, M. Marino: On a new perspective in longevity risk management: the lifetime shifting. In: Mathematical and Statistical Methods for Actuarial Sciences and Finance, Springer Cham. (2024), https://doi.org/10.1007/978-3-031-64273-9_3

[22] R. Maggistro, R. Pesenti: How Do Personal Preferences Influence the Flow Dynamics in Networks?. In: New Perspectives in Network Studies, Palgrave Macmillan Cham (2023), https://link.springer.com/chapter/10.1007/978-3-031-22083-8_6

[23] A.R. Bacinello, R. Maggistro, I. Zoccolan: Dynamic withdrawals and stochastic mortality in GLWB variable annuities. In: Mathematical and Statistical Methods for Actuarial Sciences and Finance, Springer Cham. (2022), https://doi.org/10.1007/978-3-030-99638-3_7

[24] M. Corazza, R. Maggistro, R. Pesenti: MFG-based trading model with information costs. In: Mathematical and Statistical Methods for Actuarial Sciences and Finance, Springer Cham. (2021), https://doi.org/10.1007/978-3-030-78965-7_23

[25] F. Bagagiolo, R. Maggistro, R. Pesenti: A mean field approach to model flows of agents with path preferences over a network, 58th IEEE Conference on Decision and Control (CDC), 1249-1254, (2019)

[26] R. Maggistro, G. Como: Stability and optimality of multi-scale transportation networks with distributed dynamic tolls, 57th IEEE Conference on Decision and Control (CDC), 211-216, (2018)

PhD Dissertation

R. Maggistro: On some optimal control problems on networks, stratified domains, and controllability of motion in fluids, PhD Thesis, 2017, http://eprints-phd.biblio.unitn.it/2556/

Others

- A.R. Bacinello, R. Maggistro: La Matematica finanziaria, attuariale e calcolo delle probabilità. In: Cent'anni di Economia 1924 > 2024, EUT Edizioni Università di Trieste (2024), https://www.openstarts.units.it/entities/publication/f2788076-2f15-4b37-9028-0378adb5eda6/details

- A.R. Bacinello, R. Maggistro, I. Zoccolan: Optimal Withdrawal Strategies in GLWB Variable Annuities, Research Paper DEAMS, n. 1/2022 (2022)

Presentations

Invited Talks

2024 Spatial interaction effects on transboundary pollution control, Workshop: Optimal control problems and mean field games in life sciences and economics, Venezia, December 12-13, 2024

2023 A dynamic game approach for optimal consumption, investment and life insurance problem, Workshop: Optimal control problems and mean field games in life sciences and economics, Padova, November 30 - December 1, 2023

2022 Optimal withdrawal strategies in GLWB variable annuities, 46th Annual Meeting of the Association for Mathematics Applied to Social and Economic Science (AMASES), Palermo, September 22- 24, 2022

2021 Dangerous tangents: an application of Γ-convergence to the control of dynamical systems, 45th Annual Meeting of the Association for Mathematics Applied to Social and Economic Science (AMASES), September 13-18, 2021

2021 Dynamic pricing policies for transportation networks, AMASES Webinar organized by Università dell'Insubria. May 28, 2021

2020 Origin-to-destination network flow with path preferences and velocity controls: a mean field game-like approach, Seminar in Differential Equations and Applications. University of Padova (Italy). May 28, 2020

2019 Dangerous tangents and the control of dynamical systems, Seminar for the cycle of Mathematics seminars. University of Venice (Italy). December 06, 2019.

2019 Focus su Big data, intelligenza artificiale e visitor experience. Primi risultati sul progetto Smart Cities, Intelligenza Artificiale: persone, strumenti e processi nel settore turistico. Venezia, October 24, 2019

2019 Stability and optimality of multi-scale transportation networks with distributed dynamic tolls, Seminar for the cycle of Mathematics seminars. University of Venice (Italy). January 30, 2019.

2015 Thermostatic Approximation of Optimal Control Problems on a Multi-Domain, Workshop Vaxjo-Trento (Sweden-Italy) afternoon on Control, Stochastic Processes and Financial Mathematics, Trento (Italy), March 10, 2015.

Seminars in Conferences

2024 Multi-Agent Dynamic Financial Portfolio Management: A Differential Game Approach, 26th International Congress on Insurance: Mathematics and Economics, Chicago, Illinois, United States, July 8-11, 2024

2024 A dynamic game approach for optimal consumption, investment and life insurance problem, MAF2024 Mathematical and Statistical Methods for Actuarial Sciences and Finance, Le Havre (France), April 4-6, 2024

2023 Transboundary Pollution Control under Evolving Social Norms: a Mean-Field Approach, 47th Annual Meeting of the Association for Mathematics Applied to Social and Economic Science (AMASES), Milano, September 20 - 22, 2023

2023 The interaction between providers and customers of variable annuities under a dynamic approach, 26th International Congress on Insurance: Mathematics and Economics, Edinburgh (Scotland), July, 4-7, 2023

2022 A dynamic programming approach to price VAs within a stochastic mortality framework, 25th International Congress on Insurance: Mathematics and Economics, Guangzhou (China), July, 12-15, 2022

2022 Dynamic withdrawals and stochastic mortality in GLWB variable annuities, MAF2022 Mathematical and Statistical Methods for Actuarial Sciences and Finance, Salerno, April 20-22, 2022

2022 Optimal withdrawal strategies in GLWB variable annuities, XXIII Workshop on Quantitative Finance, Roma, 31 March-1 April 2022

2021 Decentralized dynamic pricing of transportation networks, SIMAI 2020+2021, Parma, August 30-September 3, 2021

2020 MFG-based trading model with information costs, eMAF2020 Mathematical and Statistical Methods for Actuarial Sciences and Finance, Remote Conference, September 18, 22 and 25, 2020

2019 A mean field approach to model flows of agents with path preferences over a network, 2019 IEEE 58th Conference on Decision and Control (CDC), Nice, December 11-13, 2019

2019 A mean field approach to model flows of agents with path preferences over a network, Mean Field Games and Related Topics - 5, Levico Terme (Trento, Italy), September 9-13, 2019.

2019 On Multiscale Transportation Networks with Distributed Dynamics Tolls, 43th Annual Meeting of the AMASES, Perugia (Italy), September 9-11, 2019.

2019 Optimal control of the MFG equilibrium for a pedestrian tourists' flow model, CROWDS: models and control, CIRM Marseille, France, June 3-7, 2019.

2016 Decentralized routing problem via mean-field games, 17th International Symposium on Dynamic Games and Applications, Urbino (Italy), July, 12-15, 2016.

2016 Poster: Hybrid thermostatic approximation of junctions in optimal control problems on networks, HJ2016 Hamilton-Jacobi Equations: new trends and applications, Rennes (France), May 30-June 3, 2016.

2015 On optimal control problems for some switching systems, Trento (Italy), October 8, 2015.

2015 Thermostatic Approximation of Optimal Control Problems on a Multi-Domain, SIAM Conference on Control and its Applications, Paris (France), July 8-12, 2015.

I declare, being aware of the provisions of the law in case of false declarations, that any information in this CV is correct and truthful.

Trieste, 16/12/2024

Signature,
Prof. Rosario Maggistro