Alessandro Calvia | Curriculum vitae

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Academic positions

Università di Parma — **Parma, Italy**
Assistant Professor (tenure track – RTD-b), Dep. of Economics and Management — *01 Apr 2023 – today*

LUISS Guido Carli — **Rome, Italy**
Assistant Professor, Dep. of Economics and Finance — *15 Oct 2019 – 31 Mar 2023*

Università di Milano-Bicocca — **Milan, Italy**
Postdoctoral Research Fellow, Dep. of Statistics and Quantitative Methods — *01 Jan 2018 – 14 Oct 2019*
Scientific supervisor: Prof. Emanuela Rosazza Gianin

Professional qualifications

12 Dec 2023 – today: Abilitazione Scientifica Nazionale (National Scientific Qualification) alle funzioni di professore universitario di II Fascia nel S.C. 13/D4 - Metodi Matematici dell'Economia e delle Scienze Attuariali e Finanziarie.

Education

University of Milano-Bicocca — **Milan, Italy**
Ph.D. in Pure and Applied Mathematics — *Dec 2014 – Feb 2018*
Thesis: *Optimal control of pure jump Markov processes with noise-free partial observation*
Advisor: Prof. Marco Fuhrman, Supervisor: Prof. Gianmario Tessitore

Politecnico di Milano — **Milan, Italy**
Master's Degree in Mathematical Engineering — *Oct 2011 – Jul 2014*
Major: Quantitative finance.
Thesis: *Filtering of pure jump Markov processes with noise-free observation.*
Advisor: Prof. Marco Fuhrman

Politecnico di Milano — **Milan, Italy**
Bachelor's Degree in Mathematical Engineering — *Sep 2008 – Sep 2011*
Final exam (reading course): *Dominanza stocastica e separazione tramite fondi comuni.*
Advisor: Prof. Emilio Barucci

Research interests

- Stochastic filtering, optimal control problems under full and partial observation, and their applications to economics and finance.
- Hamilton-Jacobi-Bellman equations, Backward Stochastic Differential Equations and their applications.
- Stochastic processes with discontinuous trajectories, random measures and their applications.
- Risk measures, g-*expectations* and robustness.

Publications & accepted papers

- A. Calvia, F. Gozzi, M. Leocata, G. I. Papayiannis, A. Xepapadeas, A. N. Yannacopoulos, *An optimal control problem with state constraints in a spatio-temporal economic growth model on networks*, J. of Math. Econ., 113 (2024), 102991, `https://doi.org/10.1016/j.jmateco.2024.102991`.

- A. Calvia, F. Gozzi, F. Lippi, G. Zanco, *A simple planning problem for COVID-19 lockdown: a dynamic programming approach*, Econ. Theory, 77:1-2 (2024), pp. 169–196, `https://doi.org/10.1007/s00199-023-01493-1`.
- A. Calvia, G. Cappa, F. Gozzi, E. Priola, *HJB equations and stochastic control on half-spaces of Hilbert spaces*, J. Optim. Theory Appl., 198 (2023), pp. 710–744, `https://doi.org/10.1007/s10957-023-02208-1`.
- E. Bandini, A. Calvia, K. Colaneri, *Stochastic filtering of a pure jump process with predictable jumps and path-dependent local characteristics*, Stoch. Proc. Appl., 151 (2022), pp. 396–435, `https://doi.org/10.1016/j.spa.2022.06.007`.
- A. Calvia, G. Ferrari, *Nonlinear Filtering of Partially Observed Systems arising in Singular Stochastic Optimal Control*, Appl. Math. Optim., 85:25 (2022), `https://doi.org/10.1007/s00245-022-09822-x`.
- A. Calvia, S. Federico, F. Gozzi, *State constrained control problems in Banach lattices and applications*, SIAM J. Control Optim., 59 (2021), pp. 4481–4510, `https://doi.org/10.1137/20M1376959`.
- A. Calvia, E. Rosazza Gianin, *Risk measures and progressive enlargement of filtration: a BSDE approach*, SIAM J. Financial Math., 11 (2020), pp. 815–848, `https://doi.org/10.1137/19M1259134`.
- A. Calvia, *Stochastic filtering and optimal control of pure jump Markov processes with noise-free partial observation*, ESAIM: COCV, 26 (2020), 25, `https://doi.org/10.1051/cocv/2019020`.
- A. Calvia, *Optimal control of continuous-time Markov chains with noise-free observation*, SIAM J. Control Optim., 56 (2018), pp. 2000–2035, `https://doi.org/10.1137/17M1139989`.

Preprints

- A. Calvia, S. Federico, G. Ferrari, F. Gozzi, *A mean-field model of optimal investment*, preprint, arXiv:2404.02871, 2024 (submitted).

Research in progress

- *Optimal control of Piecewise Deterministic Markov Processes of McKean-Vlasov type*, with Dr. Elena Bandini.
- *Stochastic filtering and singular control under full or partial information*, with Prof. Giorgio Ferrari.
- *Optimal retail energy pricing*, with Prof. René Aïd and Prof. Salvatore Federico.
- *Partial smoothing and applications to optimal control problems*, with Prof. Fausto Gozzi, Prof. Federica Masiero, Prof. Gianmario Tessitore.
- *Optimal control with unobserved parameters*, with Prof. Marco Fuhrman.
- *Optimal control of measure-valued Piecewise Deterministic Markov Processes and applications*, with Prof. Fulvia Confortola, Prof. Andrea Cosso, Dr. Mattia Martini.
- *Mathematical economics and agroecology*, with Prof. Raouf Boucekkine, Prof. Fausto Gozzi, Prof. Federica Masiero.

Scientific visits

29 Apr – 3 May 2024: Universität Bielefeld, Germany. Invited by Prof. Giorgio Ferrari.
15 – 19 Apr 2024: Rennes Business School, France. Invited by Prof. Raouf Boucekkine.
13 – 17 Mar 2023: Université Paris Dauphine-PSL, France. Invited by Prof. René Aïd.
27 Feb – 10 Mar 2023: Universität Bielefeld, Germany. Invited by Prof. Giorgio Ferrari.
16 – 20 May 2022: Universität Bielefeld, Germany. Invited by Prof. Giorgio Ferrari.
09 – 13 May 2022: Université Paris Dauphine-PSL, France. Invited by Prof. René Aïd.
21 Mar – 08 Apr 2022: University of Bologna, Italy. Invited by Dr. Elena Bandini.
17 – 19 Jan 2022: University of Milano-Bicocca, Italy. Invited by Prof. Federica Masiero.
12 – 14 Sep 2018: University of Leeds, UK. Invited by Dr. Katia Colaneri.

Research projects and grants

2024: Principal investigator of the project *Mathematical methods for optimal control problems in economics with spatial heterogeneity*, funded by the University of Parma to open a call for a one-year post-doc position. Funding: 23 891,00 €.

2024: Principal investigator of the INdAM-GNAMPA project *Problemi di controllo ottimo stocastico in dimensione infinita* (transl.: *Stochastic optimal control problems in infinite dimension*), funded by INdAM, an Italian national mathematical institute. Funding: 4000,00 €.

2024: Principal investigator of the project *Economic Growth Problems on Networks*, funded by the University of Parma. Funding: 3000,00 €.

2022: Recipient of the *Erasmus+ Staff Mobility for Teaching* grant for the A. Y. 2021/2022. The project provides funding for a scientific visit at the *Université Paris Dauphine-PSL*, including teaching a PhD course (15 hours), titled *Stochastic filtering and applications to optimal control problems in finance and economics*. The course was held from 9 to 13 May 2022.

2020-2023: Participant in the national MIUR-PRIN 2017 project *The Time-Space Evolution of Economic Activities: Mathematical Models and Empirical Applications*. Principal investigator: Prof. Fausto Gozzi, Local research unit director: Prof. Fausto Gozzi.

2020: Recipient of the *Erasmus+ Staff Mobility for Teaching* grant for the A. Y. 2019/2020. The project provides funding for a scientific visit at the *Center for Mathematical Economics*, Bielefeld University, including teaching a PhD course (15 hours), titled *Stochastic filtering and applications to finance and economics*. The mobility was postponed to the A. Y. 2020/2021, due to the Covid-19 pandemic, and was held (in virtual mode) from 14 to 18 June 2021.

2019: Principal investigator of the INdAM-GNAMPA project *Problemi di controllo ottimo stocastico con osservazione parziale in dimensione infinita* (transl.: *Stochastic optimal control problems with partial observation in infinite dimension*), funded by INdAM, an Italian national mathematical institute. Funding: 3300,00 €. This project also provided funding for a scientific visit by Prof. Giorgio Ferrari, 22-29 February 2020 at LUISS University, to work on the project *Stochastic filtering and singular control*.

2018: Participant in the INdAM-GNAMPA project *Controllo ottimo stocastico con osservazione parziale: metodo di randomizzazione ed equazioni di Hamilton-Jacobi-Bellman sullo spazio di Wasserstein* (transl.: *Stochastic optimal control with partial observation: randomization method and Hamilton-Jacobi-Bellman equations on the Wasserstein space*), funded by INdAM, an Italian national mathematical institute. Principal investigator: Dr. Elena Bandini.

2017-2020: Participant in the national MIUR-PRIN 2015 project *Deterministic and stochastic evolution equations*, funded by the Italian Ministry of Education, Universities and Research. Principal investigator: Prof. Alessandra Lunardi, Local research unit director: Prof. Gianmario Tessitore.

2017: Participant in the INdAM-GNAMPA project *Sistemi stocastici singolari: buona posizione e problemi di controllo* (transl.: *Singular stochastic systems: well posedness and control problems*), funded by INdAM, an Italian national mathematical institute. Principal investigator: Prof. Enrico Priola.

2016: Participant in the INdAM-GNAMPA project *Problemi di controllo ottimo stocastico con osservazione parziale e processi di punto marcati* (transl.: *Stochastic optimal control problems with partial observation and marked point processes*), funded by INdAM, an Italian national mathematical institute. Principal investigator: Dr. Fulvia Confortola.

2015: Participant in the INdAM-GNAMPA project *Applicazioni innovative dei processi di punto marcato* (transl.: *Innovative applications of marked point processes*), funded by INdAM, an Italian national mathematical institute. Principal investigator: Dr. Fulvia Confortola.

Seminars & Posters

7 Sep 2024: Invited talk: *Economic growth problems with spatial heterogeneity*, AMASES XLVIII, Ischia, Italy.

14 Jun 2024: Invited talk: *A Mean-Field Model for Optimal Investment*, Fourth Italian Meeting on Probability and Mathematical Statistics, Rome, Italy.

29 May 2024: Invited talk: *Optimal control problems with state constraints and applications to economics*, Department of Mathematics, University of Parma, Italy.

09 Apr 2024: Contributed talk: *Economic growth problems in time-space*, Seminari di Economia, University of Parma, Italy.

17 Jan 2024: Invited talk: *A Mean-Field Model for Optimal Investment*, Politecnico di Milano, Italy.

18 Dec 2023: Invited talk: *Economic growth problems in time-space*, Workshop related to the MIUR-PRIN 2017 project titled 'The Time-Space Evolution of Economic Activities: Mathematical Models and Empirical Applications', LUISS University.

21 Sep 2023: Invited talk: *Optimal retail energy pricing*, AMASES XLVII, University of Milano-Bicocca, Italy.

12 Sep 2023: Invited talk: *A Mean-Field Model for Optimal Investment*, 3rd Workshop on The Mathematics of Subjective Probability, University of Milano-Bicocca, Italy.

29 Jun 2023: Contributed talk: *A Mean-Field Model for Optimal Investment*, 11th General AMaMeF Conference, Universität Bielefeld, Germany.

06 Mar 2023: Invited talk: *Stochastic filtering in a non-Markovian framework with predictable jump times*, UMI-PRISMA Webinar.

01 Mar 2023: Invited talk: *Dynamic programming in non-convex settings: an application to the optimal control of an SIRD model*, One-day Workshop in Mathematical Economics and Mathematical Finance, Universität Bielefeld, Germany.

07 Sep 2022: Invited talk: *Economic growth problems in time-space*, Two-day workshop on deterministic and stochastic control, Politecnico di Milano, Italy.

12 Jul 2022: Invited talk: *Economic Growth Models in Time-Space on Networks*, 15th Viennese Conference on Optimal Control and Dynamic Games, TU Wien, Austria.

27 Jun 2022: Invited talk: *Risk measures and progressive enlargement of filtrations: a BSDE approach*, 9th International Colloquium on BSDEs and Mean Field Systems, Université Savoie Mont Blanc, Annecy, France.

13 Jun 2022: Invited talk: *On a class of partially observed systems arising in singular optimal control*, Third Italian Meeting on Probability and Mathematical Statistics, University of Bologna, Italy.

27 May 2022: Invited talk: *Economic Growth Models in Time-Space on Networks*, Workshop "Taming Uncertainty and Complexity in Economics and Finance", LUISS University, Italy.

13 May 2022: Invited talk: *On a class of partially observed systems arising in singular optimal control*, Séminaire Bachelier, Institut Henri Poincaré, Paris, France.

29 Apr 2022: Invited talk: *On a class of partially observed systems arising in singular optimal control*, 3rd Spring Colloquium on Probability and Finance, University of Padova, Italy.

06 Apr 2022: Invited talk: *On a class of partially observed systems arising in singular optimal control*, University of Bologna, Italy.

01 Apr 2022: Contributed talk: *On a class of partially observed systems arising in singular optimal control*, Quantitative Finance Workshop 2022, University of Rome Tor Vergata, Italy.

03 Mar 2022: Invited talk: *On a class of partially observed systems arising in singular optimal control*, Workshop on Mathematical Economics and Financial Mathematics, Universität Bielefeld, Germany.

16 Sep 2021: Invited talk: *On a class of partially observed systems arising in singular optimal control*, AMASES XLV, University of Reggio Calabria, Italy.

25 Jun 2021: Contributed talk: *On a class of partially observed systems arising in singular optimal control*, 10th General AMaMeF Conference, University of Padova, Italy.

10 Jun 2021: Invited talk: *Economic growth problems in time-space*, University of Insubria, Italy.

12 Apr 2021: Contributed talk: *Economic growth problems in time-space*, DEF Internal Seminars, LUISS University, Italy.

13 Dec 2019: Discussant of the talk *Mean field models for systems of economic agents with spatial interaction*, by Dr. Giovanni Zanco, Workshop on "Space and Growth: Theoretical and Empirical Models", University of Pisa, Italy.

09 Sep 2019: Contributed talk: *Risk measures and progressive enlargement of filtrations: a BSDE approach*, Vienna Congress on Mathematical Finance, Wien, Austria.

19 Jun 2019: Contributed talk: *Risk measures and progressive enlargement of filtrations: a BSDE approach*, Second Italian Meeting on Probability and Mathematical Statistics, Vietri sul Mare, Italy.

13 Jun 2019: Contributed talk: *Risk measures and progressive enlargement of filtrations: a BSDE approach*, 9th General AMaMeF Conference, Paris, France.

19 Mar 2019: Invited talk: *Risk measures and progressive enlargement of filtrations: a BSDE approach*, Politecnico di Milano, Italy.

06 Feb 2019: Invited talk: *Optimal control problems with partial observation: an application to the noise-free model*, Politecnico di Milano, Italy.

24 Jan 2019: Contributer talk: *Risk measures and progressive enlargement of filtrations: a BSDE approach*, Quantitative Finance Workshop 2019, ETH Zürich, Switzerland.

11 Sep 2018: Contributed talk: *Optimal control of pure jump Markov processes with noise-free partial observation*, BSDEs, Information and McKean-Vlasov equations, University of Leeds, UK.

06 Jul 2018: Invited talk: *Stochastic filtering and optimal control of pure jump Markov processes with noise-free partial observation*, 14th Viennese Conference on Optimal Control and Dynamic Games, TU Wien, Austria.

05 Mar 2018: Invited talk: *Optimal control of pure jump Markov processes with noise-free partial observation*, University of Pisa, Italy.

20 Dec 2017: Poster: *Filtering and optimal control of time-homogeneous pure jump Markov processes with noise-free partial observation*, "Verona Paris Stochastic Modeling Semester" Opening Conference, University of Verona, Italy.

14 Sep 2017: Invited talk: *Filtering and optimal control of time-homogeneous pure jump Markov processes with noise-free partial observation*, Stochastic control, BSDEs and new developments, Roscoff, France.

05 Sep 2017: Invited talk: *Filtering and optimal control of time-homogeneous pure jump Markov processes with noise-free partial observation*, Workshop related to the MIUR-PRIN 2015 project titled 'Deterministic and stochastic evolution equations', University of Parma, Italy.

07 Jul 2017: Contributed talk: *Filtering and control of time-homogeneous pure jump Markov processes with noise-free observation*, International Workshop on BSDEs, SPDEs and their Applications, The University of Edimburgh, UK.

22 Jun 2017: Contributed talk: *Filtering and control of time-homogeneous pure jump Markov processes with noise-free observation*, First Italian Meeting on Probability and Mathematical Statistics, University of Turin & Politecnico di Torino, Italy.

13 Jun 2017: Poster: *Filtering of time-homogeneous pure jump Markov processes with noise-free observation and applications.*, 10th International Workshop on Bayesian Inference in Stochastic Processes, Bocconi University, Milan, Italy.

30 Jun 2016: Contributed talk: *Filtering and control of time-homogeneous pure jump Markov processes with noise-free observation*, 3rd Barcelona Summer School on Stochastic Analysis: A 2016 EMS Summer School, Centre de Recerca Matemàtica, Universitat Autònoma de Barcelona, Bellaterra, Spain.

17 Nov 2015: Didactic talk: *Stochastic filtering and Marked Point Processes: an introduction and an application to the noise-free model*, University of Milano-Bicocca, Italy.

29 Sep 2015: Contributed talk: *Filtering of time-homogeneous pure jump Markov processes with noise-free observation*, RTG 1845 Berlin-Potsdam Summer School, Levico Terme, Italy.

Schools, conferences and courses

5 – 7 Set 2024: *AMASES XLVIII*, Ischia, Italy.

10 – 14 Jun 2024: *Fourth Italian Meeting on Probability and Mathematical Statistics*, Rome, Italy.

18 – 20 Dec 2023: Workshop related to the MIUR-PRIN 2017 project titled 'The Time-Space Evolution of Economic Activities: Mathematical Models and Empirical Applications', LUISS University.

9 – 10 Nov 2023: Workshop *Mean Field Games in Economics 2023*, LUISS University, Italy.

20 – 22 Sep 2023: *AMASES XLVII*, University of Milano-Bicocca, Italy.

11 – 13 Sep 2023: *3rd Workshop on The Mathematics of Subjective Probability*, University of Milano-Bicocca, Italy.

26 – 30 Jun 2023: *11th General AMaMeF Conference*, Universität Bielefeld, Germany.

01 Mar 2023: *One-day Workshop in Mathematical Economics and Mathematical Finance*, Universität Bielefeld, Germany.

06 – 07 Sep 2022: *Two-day workshop on deterministic and stochastic control*, Politecnico di Milano, Italy.

12 – 15 Jul 2022: *15th Viennese Conference on Optimal Control and Dynamic Games*, TU Wien, Austria.

27 Jun – 01 Jul 2022: *9th International Colloquium on BSDEs and Mean Field Systems*, Université Savoie Mont Blanc, Annecy, France.

13 – 16 Jun 2022: *Third Italian Meeting on Probability and Mathematical Statistics*, University of Bologna, Italy.

26 – 28 May 2022: *Taming Uncertainty and Complexity in Economics and Finance*, LUISS University, Italy.

28 – 29 Apr 2022: *3rd Spring Colloquium on Probability and Finance*, University of Padova, Italy.

31 Mar – 01 Apr 2022: *Quantitative Finance Workshop 2022*, University of Rome Tor Vergata, Italy.

03 Mar 2022: *Workshop on Mathematical Economics and Financial Mathematics*, Universität Bielefeld, Germany.

13 – 18 Sep 2021: *AMASES XLV*, University of Reggio Calabria, Italy.

22 – 25 Jun 2021: *10th General AMaMeF Conference*, University of Padova, Italy.

13 – 14 Dec 2019: *Workshop on "Space and Growth: Theoretical and Empirical Models"*, University of Pisa, Italy.

09 – 11 Sep 2019: *Vienna Congress on Mathematical Finance*, Wien, Austria.

17 – 20 Jun 2019: *Second Italian Meeting on Probability and Mathematical Statistics*, Vietri sul Mare, Italy.

11 – 14 Jun 2019: *9th General AMaMeF Conference*, Paris, France.

23 – 25 Jan 2019: *Quantitative Finance Workshop 2019*, ETH Zürich, Zurich, Switzerland.

10 – 12 Sep 2018: *BSDEs, Information and McKean-Vlasov equations*, University of Leeds, UK.

23 – 27 Jul 2018: *RISM6 – Developments in Stochastic Partial Differential Equations*, RISM – Riemann International School of Mathematics, Varese, Italy.

03 – 06 Jul 2018: *14th Viennese Conference on Optimal Control and Dynamic Games*, TU Wien, Austria.

15 – 16 Mar 2018: Workshop *Model Uncertainty & Robust Finance*, University of Milan, Italy.

18 – 21 Dec 2017: *Verona Paris Stochastic Modeling Semester* Opening Conference, University of Verona, Italy.

11 – 15 Sep 2017: Conference *Stochastic control, BSDEs and new developments*, Roscoff, France.

04 – 06 Sep 2017: Workshop related to the MIUR-PRIN 2015 project titled *Deterministic and stochastic evolution equations*, University of Parma, Italy.

03 – 07 Jul 2017: *International Workshop on BSDEs, SPDEs and their Applications*, The University of Edimburgh, UK.

19 Jun – 22 Jun 2017: *First Italian Meeting on Probability and Mathematical Statistics*, University of Turin & Politecnico di Torino, Italy.

13 Jun – 15 Jun 2017: *10th International Workshop on Bayesian Inference in Stochastic Processes*, Bocconi University, Milan, Italy.

27 Jun – 01 Jul 2016: *3rd Barcelona Summer School on Stochastic Analysis*, A 2016 EMS Summer School, Centre de Recerca Matemàtica, Universitat Autònoma de Barcelona, Bellaterra, Spain.

20 – 23 Jun 2016: *Convegno Scientifico GNAMPA 2016*, INdAM - GNAMPA group Conference, Montecatini Terme, Italy.

30 May – 03 Jun 2016: *Stochastic Partial Differential Equations & Applications - X*, FBK - CIRM Conference, Levico Terme, Italy.

09 – 11 Dec 2015: Course *Martingale Optimal Transport*, University of Pisa, Italy.

28 Sep – 02 Oct 2015: *Stochastic Analysis with applications in biology, finance and physics*, RTG 1845 Berlin-Potsdam Summer School, Levico Terme, Italy.

22 May 2015: Workshop *Optimal Stopping and Applications*, University of Turin, Italy.

13 – 14 Apr 2015: Conference *Control Theory and Related Topics*, Politecnico di Milano, Italy.

02 – 06 Feb 2015: Winter School *Recent Breakthroughs in Singular Stochastic PDEs*, University of Milano-Bicocca, Italy.

Organization activity and other projects

5 – 7 Sep 2024: Organizer (with Dr. Daria Ghilli) of the Special Session *Optimal control problems and mean-field games in mathematical economics, finance, and insurance*, AMASES XLVIII, Ischia, Italy.

10 – 14 Jun 2024: Organizer (with Prof. Fulvia Confortola) of the Session *Stochastic optimal control, BSDEs, and applications*, Fourth Italian Meeting on Probability and Mathematical Statistics, Rome, Italy.

9 – 10 Nov 2023: Organizer (with Prof. Fausto Gozzi, Prof. Francesco Lippi, and Dr. Giovanni Zanco) of the Workshop *Mean Field Games in Economics 2023*, LUISS University, Rome, Italy.

20 – 22 Sep 2023: Organizer (with Prof. Valeria Bignozzi and Prof. Katia Colaneri) of the Special Session *Risk and Uncertainty in Economics, Finance and Insurance*, AMASES XLVII, University of Milano-Bicocca, Italy.

13 – 16 Jun 2022: Organizer (with Dr. Katia Colaneri) of the Session *Stochastic models for energy, management, and environmental issues*, Third Italian Meeting on Probability and Mathematical Statistics, University of Bologna, Italy.

7 – 8 Sep 2020: Organizer (with Prof. Fausto Gozzi, Prof. Francesco Lippi, and Dr. Giovanni Zanco) of the online Workshop *Mean Field Games in Economics*, LUISS University and the Einaudi Institute for Economics and Finance (EIEF), Rome, Italy.

17 – 20 Jun 2019: Organizer (with Dr. Elena Bandini) of the Session *Methods for Stochastic Filtering and Optimal Control of Processes with Jumps*, Second Italian Meeting on Probability and Mathematical Statistics, Vietri sul Mare, Italy.

Feb 2016 – Jun 2016 & Feb 2017 - Jun 2017: Tutor for the project *Piano Lauree Scientifiche. Laboratorio denominato 'Il gioco e il caso'*, funded by Dept. of Mathematics and Applications, University of Milano-Bicocca under the scientific supervision of Prof. Maria Gabriella Kuhn. The project consisted in a series of meetings with high school students aimed at improving knowledge of basic probability concepts to better understand gambling and its risks.

Nov 2015 – Jun 2016 & Nov 2016 - May 2017: Organization of the seminar cycle *Insalate di Matematica*, promoted by Dept. of Mathematics and Applications, University of Milano-Bicocca. The seminar cycle consisted in a series of informal talks by Ph.D. Students and early researchers in Mathematics.

Refereeing activity

Referee for *SIAM Journal on Control and Optimization*, *Stochastic Processes and their Applications*, *Journal of Optimization Theory and Applications*, *Journal of Mathematical Analysis and Applications*, *Stochastics*, *Mathematical Finance*, *International Journal of Theoretical and Applied Finance*, *Decisions in Economics*

and Finance, *Journal of Economic Dynamics and Control*, *Journal of Mathematical Economics*, *International Journal of Economic Theory*, *Mathematics and Financial Economics*, *Economic Theory Bulletin*, *Statistics and Probability Letters*, *The Journal of Risk*, *Asia-Pacific Financial Markets*, *Bulletin of the Malaysian Mathematical Sciences Society*.
Reviewer for AMS Mathematical Reviews (MathSciNet).

Teaching activity

A.Y. 2024/2025

Mathematics (K-P) **(teacher)**
Bachelor's Degree in Economics and management — *University of Parma*

Quant. methods for the agri-food ind. and supply chains - Mod. 1 **(teacher)**
Bachelor's Degree in Food Systems: Management, Sustainability and Technologies — *University of Parma*

Mathematical methods for data analysis **(teacher)**
PhD program in Econ. and Manag. of Innov. and Sustainab. (PhD course, 24 hours) — *University of Parma*

A.Y. 2023/2024

Mathematics (K-P) **(teacher)**
Bachelor's Degree in Economics and management — *University of Parma*

Mathematical methods for data analysis **(teacher)**
PhD program in Econ. and Manag. of Innov. and Sustainab. (PhD course, 24 hours) — *University of Parma*

Derivatives Risk Management **(teacher)**
Executive Master in Financial Management (15 hours) — *LUISS Business School*

A.Y. 2022/2023

Esercitazioni recupero OFA **(teacher)**
Bachelor's Degree in Economics and management — *University of Parma*

Quantitative Methods for the Enterprise **(teacher)**
Master's Degree in Accounting, Finance and Control — *LUISS University*

Quantitative Models for Data Science **(teacher)**
Bachelor's Degree in Management and Computer Science — *LUISS University*

A.Y. 2021/2022

Stoch. filtering and appl. to opt. control prob. in fin. and econ. **(teacher)**
PhD course (15 hours) — *Univ. Paris Dauphine-PSL*

Quantitative Methods for the Enterprise **(teacher)**
Master's Degree in Accounting, Finance and Control — *LUISS University*

Quantitative Models for Data Science **(teacher)**
Bachelor's Degree in Management and Computer Science — *LUISS University*

A.Y. 2020/2021

Stochastic filtering and applications to finance and economics **(teacher)**
PhD course (15 hours), Center for Mathematical Economics (IMW) — *Universität Bielefeld*

Quantitative Methods for the Enterprise **(teacher)**
Master's Degree in Accounting, Finance and Control — *LUISS University*

Quantitative Models for Data Science **(teacher)**
Bachelor's Degree in Management and Computer Science — *LUISS University*

Mathematics Pre-Program Course **(teacher, with Dr. Giovanni Zanco)**
Bachelor's Degrees in Econ. and Business, and in Manag. and Computer Sc. — *LUISS University*

A.Y. 2019/2020

Quantitative Methods for the Enterprise **(teacher)**
Master's Degree in Accounting, Finance and Control — *LUISS University*

Quantitative Models for Data Science **(teacher)**
Bachelor's Degree in Management and Computer Science — *LUISS University*

A.Y. 2018/2019

Mathematics for Finance **(recitations)**
Bachelor's Degree in Banking, Finance and Insurance — *University of Milano-Bicocca*
Teacher: Prof. Emanuela Rosazza Gianin

General Mathematics I **(recitations)**
Bachelor's Degree in Management Accounting — *University of Milano-Bicocca*
Teacher: Prof. Federica Masiero

Probability **(recitations)**
Bachelor's Degree in Mathematical Eng. — *Politecnico di Milano*
Teacher: Prof. Matteo Gregoratti

A.Y. 2017/2018

General Mathematics I **(recitations)**
Bachelor's Degree in Management Accounting — *University of Milano-Bicocca*
Teacher: Prof. Federica Masiero

Probability **(recitations)**
Bachelor's Degree in Mathematical Eng. — *Politecnico di Milano*
Teacher: Prof. Matteo Gregoratti

A.Y. 2016/2017

General Mathematics I **(recitations)**
Bachelor's Degree in Management Accounting — *University of Milano-Bicocca*
Teacher: Prof. Federica Masiero

Measure Theory **(recitations)**
Bachelor's Degree in Mathematics — *University of Milano-Bicocca*
Teacher: Prof. Gianmario Tessitore

Probability Theory **(recitations)**
Bachelor's Degree in Mathematics — *University of Milano-Bicocca*
Teacher: Prof. Francesco Caravenna

Probability **(tutoring)**
Bachelor's Degree in Mathematical Eng. — *Politecnico di Milano*
Teacher: Prof. Matteo Gregoratti

A.Y. 2015/2016

General Mathematics I **(recitations)**
Bachelor's Degree in Management Accounting — *University of Milano-Bicocca*
Teacher: Prof. Federica Masiero

Measure Theory **(recitations)**
Bachelor's Degree in Mathematics — *University of Milano-Bicocca*
Teacher: Prof. Gianmario Tessitore

Probability Theory **(recitations)**
Bachelor's Degree in Mathematics — *University of Milano-Bicocca*
Teacher: Prof. Francesco Caravenna

Probability **(tutoring)**
Bachelor's Degree in Mathematical Eng. — *Politecnico di Milano*
Teacher: Prof. Marco Fuhrman

A.Y. 2014/2015

Probability **(tutoring)**
Bachelor's Degree in Mathematical Eng. *Politecnico di Milano*
Teacher: Prof. Marco Fuhrman

Statistics **(tutoring)**
Bachelor's Degree in Mechanical Eng. *Politecnico di Milano*
Teacher: Dr. Fabio Zucca

Mathematical Analysis I **(tutoring)**
Bachelor's Degree in Eng. of Computing Systems *Politecnico di Milano*
Teacher: Prof. Liliana Curcio

A.Y. 2013/2014

Statistics **(tutoring)**
Bachelor's Degree in Energy Eng. *Politecnico di Milano*
Teachers: Prof. Matteo Gregoratti and Dr. Francesca Ieva

Statistics **(tutoring)**
Bachelor's Degree in Energy Eng. *Politecnico di Milano*
Teachers: Prof. Elio Piazza and Prof. Laura Sangalli

Supervising activity

- G. Bersani, *Dal CAPM ai modelli multifattoriali: analisi empirica dell'Arbitrage Pricing Theory sul mercato italiano nell'era Covid-19*. Master's Degree in Accounting, Finance and Control, LUISS University, A.Y. 2021/2022.
- M. Clarioni, *Value at Risk ed Expected Shortfall: uno studio quantitativo nel mercato delle materie prime*. Master's Degree in Accounting, Finance and Control, LUISS University, A.Y. 2021/2022.
- A. Loche, *Modelli strutturali per il rischio di credito. Un'applicazione dei modelli di Merton e KMV all'indice Euronext 100*. Master's Degree in Accounting, Finance and Control, LUISS University, A.Y. 2021/2022.
- I. Greco, *Il modello a cinque fattori di E. Fama e K. French: Analisi dell'impatto pre e post COVID-19 sui settori industriali.* Master's Degree in Accounting, Finance and Control, LUISS University, A.Y. 2020/2021.
- A. Maione, *I derivati atmosferici: analisi empirica sui dati della stazione meteorologica di Roma/Fiumicino.* Master's Degree in Accounting, Finance and Control, LUISS University, A.Y. 2020/2021.
- E. Mascarucci, *Modelli per la valutazione dei derivati energetici: uno studio sul mercato elettrico italiano.* Master's Degree in Accounting, Finance and Control, LUISS University, A.Y. 2020/2021.
- A. Mastrantonio, *Metodi quantitativi per l'Enterprise Financial Risk Management e la gestione del rischio di tasso d'interesse.* Master's Degree in Accounting, Finance and Control, LUISS University, A.Y. 2020/2021.
- A. Ruvolo, *Il rischio di credito, modelli e applicazioni. Analisi sulla probabilità di* default *delle imprese.* Master's Degree in Accounting, Finance and Control, LUISS University, A.Y. 2020/2021.

Official appointments

10 May 2024 – today: Member of the board of the PhD program *Economia e Management dell'Innovazione e della Sostenibilità (EMIS)*, 40th cycle, University of Parma.

14 Feb 2024 – today: Member of the didactics committee of the Department of Economics and Management, University of Parma.

29 Jan 2024 – today: Member of the committee for interactions with science and society, UMI-PRISMA group, Unione Matematica Italiana.

03 May 2023 – today: Member of the board of the PhD program *Economia e Management dell'Innovazione e della Sostenibilità (EMIS)*, 39th cycle, University of Parma.

09 Mar 2023: Member of the evaluation committee for the Structured Partnership Program with the Utrecht University School of Economics, targeted at students of the Bachelor's Degree in Economics and Business, LUISS University.

09 Mar 2022: Member of the evaluation committee for the Structured Partnership Program with the Utrecht University School of Economics, targeted at students of the Bachelor's Degree in Economics and Business, LUISS University.

14 Feb 2022: Member of the admissions committee (as representative of the Department of Economics and Finance, LUISS University) of the Program *Next Generation UE e qualità della spesa: istituzioni, società e imprese*, Scuola per le Politiche Pubbliche – undicesimo corso 2022, Italiadecide.

24 Feb 2021: Member of the evaluation committee for the Structured Partnership Program with the Utrecht University School of Economics, targeted at students of the Bachelor's Degree in Economics and Business, LUISS University.

15 Feb 2021: Member of the admissions committee (as representative of the Department of Economics and Finance, LUISS University) of the Program *La dimensione urbana delle politiche territoriali: istituzioni, ambiente e contesto socio-economico. I casi di Brescia, Reggio Calabria e Roma*, Scuola per le Politiche Pubbliche – decimo corso 2021, Italiadecide.

9 Jul 2020 – 31 Mar 2023: Member of the *Gruppo di Riesame* of Master's Degree in Accounting, Finance and Control, LUISS University.

16 Jun 2020 – 31 Mar 2023: Representative for the activity *Project works* of Bachelor's Degree Programs of the Department of Economics and Finance, LUISS University.

12 Feb 2020: Member of the admissions committee (as representative of the Department of Economics and Finance, LUISS University) of the Program *Transizione ambientale ed economia territoriale: politiche pubbliche e strategie di impresa*, Scuola per le Politiche Pubbliche – nono corso 2020, Italiadecide.

15 Oct 2019 – 31 Mar 2023: Representative for the activity *Project works* of Master's Degree Programs of the Department of Economics and Finance, LUISS University.

Language skills

Italian: Mother tongue

English: Advanced *C1 Level (CEFR), TOEFL iBT 105/120*

French: Intermediate *A2 Level (CEFR)*

Computer skills

Operating systems: Microsoft Windows, Apple Mac OS, Unix/Linux.

Languages: C, C++, LaTeX.

Softwares: Microsoft Office, MATLAB, R, Mathematica.

Further informations

Memberships

Society for Industrial and Applied Mathematics
Member of SIAM *Jan 2023 – today*

European Mathematical Society
Member of EMS *Mar 2020 – today*

Unione Matematica Italiana
Member of UMI *Mar 2020 – today*

Assoc. per la Matematica Appl. alle Scienze Econ. e Sociali
Member of AMASES *Feb 2019 – today*

Ist. Naz. di Alta Matematica F. Severi
Member of the INdAM-GNAMPA group *Jan 2015 – today*

Roles

Dept. of Mathematics and Applications, University of Milano-Bicocca **Milan, Italy**
Ph.D. Students representative *Feb 2016 – Dec 2017*

Corpo Bandistico Legnanese (wind ensemble) **Legnano (MI), Italy**
Council member *Feb 2016 – Feb 2021*

Artistic activity

Orchestra Accademica **Crosio della Valle (VA), Italy**
Keyboards *Oct 2017 – Oct 2019*

Scuola di Musica N. Paganini **Canegrate (MI), Italy**
Coro dei Ragazzi (choir): Tenor. Accompanying pianist *Feb 2013 – Jun 2017*

Corpo Bandistico Legnanese (wind ensemble) **Legnano (MI), Italy**
French horn & Tenor horn *Mar 2010 – today*