OFELIA BONESINI

PERSONAL DATA

Nationality:	**Italian**
Birth Date:	**17-03-1995**
E-mail:	**o.bonesini@lse.ac.uk**
Personal Website:	https://ofelia-bonesini.netlify.app

RESEARCH INTERESTS

Mean field games and N-player games;
Numerical Probability methods, Stochastic control problems, Volterra Equations, Rough Paths and Signature Methods: application to Finance and to Energy Finance.

CURRENT POSITION

The London School of Economics and Political Sciences — **London, UK**
Department of Mathematics — **September 2024 - Today**
Assistant Professor

PAST POSITIONS

Imperial College London — **London, UK**
Research Associate — **April 2023 - August 2024**
Research Assistant — **November 2022 - March 2023**

Supported by the EPSRC Grant EP/T032146/1
"Rough Volatility: A Trojan horse into modern Financial computing"

EDUCATION

University of Padova — **Padova, Italy**
Ph.D. in Computational Mathematics — **October 2019 - March 2023**

Supported by	*Fondazione Cassa di Risparmio di Padova e Treviso (CARIPARO)*
Supervisor :	**Markus Fischer, Giorgia Callegaro**

University of Padova — **Padova, Italy**
Master of Science in Mathematics — **October 2017 - July 2019**

Final mark :	**110/110 cum Laude**
Supervisor :	**Markus Fischer**
Thesis Title :	**Existence and Uniqueness of solutions for a class of McKean-Vlasov SDEs**
Selected Coursework :	**Stochastic Analysis, Stochastic Methods for Finance, Calculus of Variations, Operations Research, Numeric Methods for Data Analysis**

University of Padova — **Padova, Italy**
Bachelor of Science in Mathematics — **October 2014 - September 2017**

Final mark :	**110/110 cum Laude**
Supervisor :	**Wolfgang J. Runggaldier, Giorgia Callegaro**
Thesis Title :	**Optimal Quantization for the minimization of capital injections in an insurance company**
Selected Coursework :	**Probability and Statistics, Advanced Probability, Real Analysis, Financial Mathematics, Mathematical Statistics, Computational Laboratory, Numerical Calculus**

Liceo Ginnasio Statale Scipione Maffei — **Verona, Italy**
High school leaving certificate — **September 2009 - July 2014**

Final mark : 100/100
Focus on humanities (including ancient Greek and Latin)

RESEARCH STAYS

University of California, Berkeley — **3 May 2026 - 15 May 2026**
visiting Prof. G. Callegaro

University of Padova — **17 December 2024 - 13 January 2025**
visiting Prof. G. Callegaro

Université Paris Cité — **13 - 21 November 2024**
visiting Dr. A. Pannier

University of Milan — **7 - 14 April 2024**
visiting Prof. L. Campi

University of Padova — **18 December 2023 - 12 January 2024**
visiting Prof. G. Callegaro

Boston University — **13 - 19 June 2023**
visiting Prof. K. Spiliopoulos

Imperial College London — **21 November 2021 - 17 December 2021**
visiting Prof. A. Jacquier

PUBLISHED OR ACCEPTED PAPERS

(E) **O. Bonesini, A. Jacquier and A. Pannier.** ***Rough volatility, path-dependent PDEs and weak rates of convergence.*** **To appear in Annals of Applied Probability. [ArXiv].**

(H) **O. Bonesini, I. Gasteratos, A. Jacquier and E. Rossi-Ferrucci.** ***Rough paths for multi-factor rough volatility models.*** **To appear in Finance and Stochastics. [ArXiv].**

(I) **O. Bonesini, A. Jacquier and A. Muguruza.** ***Risk premium and rough volatility.*** **Frontiers of Mathematical Finance, 7, 78-94, 2025. [DOI].**

- (F) **R. Aïd, O. Bonesini, G. Callegaro and L. Campi.** ***Continuous-time persuasion by filtering.*** **Journal of Economic Dynamics and Control, 176, 2025. [DOI].**
- (D) **O. Bonesini, A. Jacquier and C. Lacombe.** ***A theoretical analysis of Guyon's toy volatility model.*** **SIAM Journal on Financial Mathematics, 16(2), 2025. [DOI].**
- (C) **O. Bonesini, L. Campi and M. Fischer.** ***Correlated Equilibria and Mean Field Games in progressive strategies.*** **Mathematics of Operations Research, 50(2), 2024. [DOI].**
- (A) **O. Bonesini, G. Callegaro and A. Jacquier.** ***Functional quantization of rough volatility and applications to volatility derivatives.*** **Quantitative Finance, 23(12), 1769–1792, 2023. [DOI].**
- (B) **R. Aïd, O. Bonesini, G. Callegaro and L. Campi.** ***A McKean-Vlasov Game of Commodity Production, Consumption and Trading.*** **Applied Mathematics and Optimization, 86(40), 2022. [DOI].**

PREPRINTS

- (G) **O. Bonesini, G. Lanaro.** ***A mean-field model for pollution abatement via cap and trade mechanism.*** **Preprint 2026. [ResearchGate].**
- (G) **O. Bonesini, G. Callegaro, M. Grasselli and G. Pagès.** ***Efficient simulation of a new class of Volterra-type SDEs.*** **Preprint 2025. [ArXiv].**
- (L) **O. Bonesini and A. Jacquier.** ***$\mathfrak{X}$PDE for $\mathfrak{X} \in \{\mathrm{BS}, \mathrm{FBS}, \mathrm{P}\}$: a rough volatility context.*** **Preprint 2023. [ArXiv].**

SEMINARS AND COMUNICATION AT CONFERENCES

- **Presentation of paper (H) (invited speaker) at the 13th World Congress of the Bachelier Finance Society, Bologna (Italy), 29 June 2026.**
- **Presentation of paper (M) (invited speaker) at the Junior Female Researchers in Probability Workshop, TU Berlin (Germany), 24 June 2026.**
- **Presentation of paper (E) (invited speaker) at the 5th Italian Meeting on Probability and Mathematical Statistics, Palermo (Italy), 12 June 2026.**
- **Presentation of paper (M) at the IEOR Seminar, UC Berkeley, California (US), 13 May 2026.**
- **Presentation of paper (M) (invited speaker) at the Stochastic control and Games for Risk and Regulation Workshop, Hammamet (Tunisia), 27-30 April 2026.**
- **Presentation of paper (E) (invited speaker) at the Rough Volatility Day, WIAS Berlin (Germany), 21 November 2025.**
- **Presentation of paper (F) (invited speaker) at the Financial Mathematics and Stochastic Analysis Seminar, Berlin (Germany), 20 November 2025.**
- **Presentation of paper (F) (invited speaker) at the Probability Seminar, University of Manchester (UK), 1 November 2025.**

- **Presentation of paper (F) (invited speaker, organised session) at the SIAM Conference on Financial Mathematics and Engineering (FM25), Miami (Florida, U.S.), 15-18 July 2025.**
- **Presentation of paper (H) (invited speaker) at the III Vienna Congress on Mathematical Finance (VCMF 2025), Vienna (Austria), 9-11 July 2025.**
- **Presentation of paper (H) (contributed talk) at the XII AMaMeF Conference, University of Verona (Italy), 23-27 June 2025.**
- **Presentation of paper (F) (invited speaker) at the Workshop "Leaning on random towers", Scuola Normale Superiore, Pisa (Italy), 7-9 May 2025.**
- **Presentation of paper (F) (invited speaker) at the Financial Mathematics Seminar, King's College London (UK), 24 March 2025.**
- **Presentation of paper (F) (invited speaker) at the Paris Bachelier Seminar, Paris (France), 15 November 2024.**
- **Presentation of paper (F) (invited speaker) at the Quantitative Finance Seminar, Politecnico di Milano, Milan (Italy), 13 November 2024.**
- **Presentation of paper (F) (invited speaker) at the Mathematical and Computational Finance Seminar, Mathematical Institute, Oxford University(UK), 7 November 2024.**
- **Presentation of paper (F)(invited speaker) at the International Conference "Stochastic control and Games for Risk and Regulation", Holden Tulip Taj Sultan, Hammamet, 28 - 31 October 2024.**
- **Presentation of paper (F) (invited speaker, organised session) at the XLVIII A.M.A.S.E.S. Annual Conference, Ischia, 5 - 7 September 2024.**
- **Presentation of paper (F) (contributed session) at the XII Bachelier World Congress of the Bachelier Finance Society, FGV EMAp, Rio de Janeiro (Brasil), 8 - 12 July 2024.**
- **Presentation of paper (F) at the ETH - Hong Kong - Imperial Mathematical Finance Workshop, Imperial College London (UK), 17 - 20 June 2024.**
- **Presentation of paper (F) (invited speaker, organised session) at the IV Italian Meeting on Probability and Mathematical Statistics, Rome, 10 - 14 June 2024.**
- **Presentation of paper (E) (early career session) at SIAG/FME virtual seminars series, online, 11 April 2024.**
- **Presentation of paper (E) (invited speaker) at the Workshop "The memory of volatility", University of Padova (Italy), 29 February - 1 March 2024.**
- **Presentation of paper (C) (invited speaker) at the Workshop "Optimal control problems and mean field games in life sciences and economics", University of Padova (Italy), 30 November-1 December 2023.**
- **Presentation of paper (C) (invited speaker) at the Stochastic and Finance Seminar, Warwick University (UK), 25 October 2023.**
- **Presentation of paper (E) (junior invited speaker) at the London-Paris Bachelier Workshop, Imperial College London (UK), 18 September 2023.**

- Presentation of paper (E) (invited speaker) at the Stochastics around Finance Workshop, Kanazawa (Japan), 28-30 August 2023.
- Presentation of paper (D) (invited speaker, organized session) at the X International Congress on Industrial and Applied Mathematics (ICIAM 2023), Waseda University, Tokyo (Japan), 20-25 August 2023.
- Presentation of paper (D) (invited speaker) at the Florence-Paris workshop on Statistics of Random Processes and Its Applications to Financial Econometrics, University of Florence, Florence (Italy), 10-11 July 2023.
- Presentation of paper (C) (contributed talk) at the Stochastic Control and Financial Engineering Workshop, Princeton (New Jersey, U.S.), 20-23 June 2023.
- Presentation of paper (B) (contributed talk) at the Women in Mathematical Finance Workshop, Rutgers University, New Brunswick (New Jersey, U.S.), 12-13 June 2023.
- Presentation of paper (D) (invited speaker, organized session) at the SIAM Conference on Financial Mathematics and Engineering (FM23), Philadelphia (Pennsylvania, U.S.), 6-9 June 2023.
- Presentation of paper (E) (invited speaker, organized session), at the "Volatility is rough. Now what?" Workshop, Sabhal Mòr Ostaig, Isle of Skye (Scotland), 22-26 May 2023.
- Presentation of paper (C) (contributed talk) at the Control & Optimisation Pisa 2023 Conference, Pisa (Italy), 8-10 May 2023.
- Presentation of paper (E) (invited speaker) at Financial Mathematics and Stochastic Analysis Seminars, University of Padova (Italy), 29 March 2023.
- Presentation of paper (C) (invited speaker) at LPSM Mathématiques Financières et Actuarielles, Probabilités Numériques Seminars, LPSM, Paris (France), 9 March 2023.
- Presentation of paer (E) (invited speaker) at Finance and Stochastics Seminars, Imperial College London (United Kingdom), 21 February 2023.
- Presentation of paper (C) (contributed talk) at the III Junior female researchers in probability Workshop, TU Berlin (Germany), 5-7 October 2022.
- Presentation of paper (C) (invited speaker, organized session) at the XLVI A.M.A.S.E.S. Annual Conference, Palermo (Italy), 22-24 September 2022.
- Presentation of paper (D) (contributed talk) at the VI London-Paris Bachelier Workshop on Mathematical Finance, Henri Poincaré Institute, Paris (France), 15-16 September 2022.
- Presentation of paper (C) (invited speaker, organized session) at the XIX ISDG Symposium, University of Porto (Portugal), 25-29 July 2022.
- Presentation of paper (C) (invited speaker, organized session) at the III Italian meeting in Probability and Statistics, University of Bologna (Italy), 13-16 June 2022.
- Presentation of paper (B) (contributed talk) at Stochastic Games and Martingale Optimal Transport, University of Milan (Italy), 5-6 May 2022.

- Presentation of paper (B) (contributed talk) at the XXIII Workshop on Quantitative Finance, University of Roma Tor Vergata (Italy), 31 March - 1 April 2022.
- One-hour lecture on Correlated Equilibria and Mean Field Games and presentation of paper (C) as a talk in the *Graduate Seminars* cycle, University of Padova (Italy), 23 February 2022.
- Presentation of paper (A) as a talk in the cycle of seminars *Advanced Stochastic Modelling*, University of Vienna (Austria), online, 11 January 2022.
- Presentation of paper (B) (junior invited speaker) at the I Florence-Paris Workshop on Mathematical Finance, Florence (Italy), 27-29 October 2021.
- Presentation of paper (B) (contributed talk) at the XLV A.M.A.S.E.S. Annual Conference, Reggio Calabria (Italy), online, 13-18 September 2021.
- Presentation of paper (B) (with discussant) at the X International Ruhr Energy Conference (10th INREC 2021), Essen (Germany), online, 15-16 September 2021.
- Presentation of paper (B) (contributed talk) at the XIV European Summer School in Financial Mathematics, ICMS, Edinburgh (Scotland), online, 30 August - 3 September 2021.
- Presentation of paper (A) (contributed talk) at the SIAM Conference on Financial Mathematics and Engineering (FM21), Philadelphia (Pennsylvania, U.S.), online, 1-4 June 2021.
- Presentation of paper (A) (poster session) at the London-Paris Bachelier online Workshop in Financial Mathematics, 11-12 March 2021.
- Presentation of paper (A) (with discussant) at the XXII Workshop on Quantitative Finance, University of Verona (Italy), online, 28-29 January 2021.
- One-hour lecture and presentation of paper (A) for the Ph.D. course *Numerical methods for Probability* (24 h), University of Padova (Italy), online, 15 December 2020.

SCHOOLS AND CONFERENCES ATTENDED (AUDITOR)

- London-Paris Bachelier Workshop in Financial Mathematics, Paris (France), 17-18 September 2026.
- London-Paris Bachelier Workshop in Financial Mathematics, LSE London (United Kingdom), 6-7 November 2025.
- Quant Strata EU 2025, London (United Kingdom), 14-15 October 2025.
- Workshop on PDEs and Machine Learning, Imperial College London (United Kingdom), 3-5 April 2023.
- Workshop on Stochastic Portfolio Theory, Imperial College London (United Kingdom), 15 March 2023.
- Verona Workshop in Financial Mathematics 2022, University of Verona (Italy), 14 December 2022.

- **100 years UMI and 800 years UniPD Conference, University of Padova (Italy), 23-27 May 2022.**
- **III Spring Colloquium in Probability and Finance, University of Padova (Italy), 28-29 April 2022.**
- **Rough Volatility Workshop, Imperial College London (Great Britain), 14-15 March 2022.**
- **Winter Seminar on Mathematical Finance (XX Winter school on Mathematical Finance), online, 24 January 2022.**
- **X General AMaMeF Conference, University of Padova (Italy), online, 22-25 June 2021.**
- **Summer school in "Distributed Control: Decentralization and Incentives", CIRM, Luminy (France), online, 14-18 June 2021.**
- **Introduction to Mean Field Games and Applications, IMSI, University of Chicago, Illinois, U.S., online, 1-25 June, 2021**
- **Conference of Numerical Probability in honour of Gilles Pagès' 60th birthday, Sorbonne Université, Paris (France), online, 26-28 May 2021.**
- **II Spring Colloquium on Probability and Finance, University of Padova (Italy), 29 April 2021.**
- **Stochastic Processes and their Friends (first edition of the conference celebrates the scientific career of Prof. Alexander Yu. Veretennikov), University of Leeds, online, 18-19 March 2021.**
- **Online Workshop Mean Field Games in Economics, LUISS University and Einaudi Institute for Economics and Finance (EIEF), 7-8 September 2020.**
- **XIII European Summer School in Financial Mathematics, Vienna (Austria), 31 August - 4 September 2020.**
- **LMS Invited Lecture Series 2020: *Fractional Calculus and Fractional Stochastic Calculus, Including Rough-Paths, with Applications*, online, 15-19 June 2020.**
- **XXI Workshop on Quantitative Finance, Naples (Italy), 29-31 January 2020.**
- **Workshop Half day in Stochastic Analysis and applications, University of Padova (Italy), 30 October 2019.**
- **XII European Summer School in Financial Mathematics, University of Padova (Italy), 2-6 September 2019.**

CONFERENCE ORGANISATION

I helped with the organization of the following events:

- **LMF PhD Day, LSE (UK), 17 October 2025.**
- **LSE - Imperial one-day Mathematical Finance Workshop, Imperial College London (UK), 10 April 2025.**

- ETH - Hong Kong - Imperial Mathematical Finance Workshop, Imperial College London (UK), 17 - 20 June 2024.
- 100 years UMI and 800 years UniPD Conference, University of Padova (Italy), 23-27 May 2022.
- III Spring Colloquium on Probability and Finance, University of Padova (Italy), 28-29 April 2021.
- II Spring Colloquium on Probability and Finance, University of Padova (Italy), 29 April 2021.
- XII European Summer School in Financial Mathematics, University of Padova (Italy), 2-6 September 2019.

EDITORIAL AND OTHER SERVICE

Associate Editor of Frontiers of Mathematical Finance

TEACHING

In 2025 I successfully completed the Postgraduate Certificate in Higher Education (PGCertHE).

- Computational Methods in Financial Mathematics (MA323), BSc in Financial Mathematics, Department of Mathematics, LSE (30 h), January-April 2026.
- Machine Learning in Financial Mathematics (MA435), MSc in Financial Mathematics, Department of Mathematics, LSE (30 h), January-April 2026.
- Machine Learning in Financial Mathematics (MA435), MSc in Financial Mathematics, Department of Mathematics, LSE (30 h), January-April 2025.
- Portfolio Management, MSc in Finance, Department of Mathematics, Imperial College London (15 h), October-November 2023.
- Exercise sessions (in Italian) for the course *Probability and Statistics*, Bachelor degree in Mathematics, University of Padova (50 h), March-June 2022.
- Exercise sessions (in Italian) for the course *Probability and Statistics*, Bachelor degree in Mathematics, University of Padova (50 h), March-June 2021.

STUDENTS' SUPERVISION EXPERIENCE

MSc Master Students at LSE:

- Jay Razdan: *A Mean Field Game of Cap-and-Trade Emission Markets*. January-August 2025.
- James Howell-Smith: *Pricing VIX Futures in the Rough Bergomi Model via the Hybrid Scheme*. January-August 2025.

MSc Master Students at Imperial College London:

- Ines A M Vanheuverswyn: *Equity-IR Hybrid derivatives*. May-September 2024.

- Rafael Kyriakou: *Weighted multilevel Monte Carlo method for VIX option pricing*. May-September 2024.
- Andrea Argyrou: *Non-symmetric SSVI Smiles and Implied Volatility Bubbles*. May-September 2024.
- Bingran Yu: *Indifference Pricing and Hedging with Parametric Risk Factor Models*. May-September 2023.
- George Coxon: *Optimal Execution with Intraday Liquidity Changes and Transient Nonlinear Impact*. May-September 2023.

HONORS AND AWARDS

- *Nicola Bruti Liberati Prize 2023* for the best doctoral thesis in Mathematical Finance awarded by the Bachelier Finance Society and the Department of Mathematics of the Politecnico di Milano (in cooperation with Springer).
- *Bando Cassini Senior 2023* in the form of a 1,000 EURO contribution to organise a one-day workshop on the project "The memory of stochastic processes".
- *Cecilia Tanner Research Support Grant* in the form of 1,500 GBP contribution for the participation at the SIAM Conference on Financial Mathematics and Engineering 2023 (FM2023) in Philadelphia, Pennsylvania, U.S., 5-9 June 2023.
- DOR (Dotazione Ordinaria della Ricerca dipartimentale) fundings 2020, 2021 and 2022, project name "Processi stocastici ed applicazioni", University of Padova.
- *SIAM Student Travel Award* in the form of a complimentary registration for the (online) SIAM Conference on Financial Mathematics and Engineering 2021 (FM2021), originally scheduled in Philadelphia, Pennsylvania, U.S., 1-4 June 2021.
- *Borsa di studio per merito Fiorito-Frassanito* in 2015 (Scholarship for high school academic achievement).

LANGUAGES

Italian	Mother tongue
English	Fluent (B2) in speaking, reading and writing

TECHNICAL SKILLS

Programming Skills :	Python, MATLAB, Mathematica, VBA, AMPL, LaTeX Advanced user of Microsoft Office

WORK EXPERIENCE

Independent tutor — Verona, Italy
Mathematics and Physics tutor — October 2013 - Present

I give private lessons of Mathematics and Physics for high school students.
I usually assist one or two students per year and currently I am giving lessons bi-weekly.

Endes **Verona, Italy**
Hostess **October 2016 - December 2017**

Endes is a society of public relations that organizes conferences, conventions and exhibitions in various contexts. I worked as a hostess for some museum in Verona. Among other tasks I was in charge of the surveillance of paintings.

Cestim San Nicolò **Verona, Italy**
Italian language tutor **October 2011 – June 2013**

Cestim is a non-profit organisation that assists immigrants with all their everyday problems.
I volunteered as a tutor for foreign students to help them improve their Italian skills.