Alessandra Cretarola

Curriculum Vitae

Current Position

01/09/2024 - present: Associate Professor MATH-03/B - Probability and Mathematical Statistics, Department of Economic Studies, University "G. D'Annunzio" of Chieti-Pescara.

Contacts

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Previous Academic Positions

- 28/12/2015 - 31/08/2024: Associate Professor STAT-04/A (SECS-S/06) - Mathematical Methods in Economics and Actuarial and Financial Sciences, Department of Mathematics and Computer Science, University of Perugia.
- 31/12/2010 - 27/12/2015: Permanent University Researcher MATH-03/B (MAT/06) - Probability and Mathematical Statistics, Department of Mathematics and Computer Science, University of Perugia.
- 01/06/2010 - 30/12/2010: Two-year Research Fellow, Department of Decision Sciences, Bocconi University, Milan.
- 01/05/2009 - 30/04/2010: Member of the *MATHFI - Financial Mathematics* Project Group, INRIA Paris - Rocquencourt Research Centre, France.
- 01/01/2007 - 31/05/2010: Four-year Research Fellow, Department of Economics and Business, LUISS Guido Carli University, Rome.

Education

- 21/06/2007: Ph.D. in Mathematics, *Doctor Europaeus* (MATH-03/B (MAT/06) - Probability and Mathematical Statistics), University of Bologna. Supervisor: Prof. Francesca Biagini.
- 21/02/2003: M.Sc. in Mathematics, 110 cum laude. Supervisor: Prof. Francesca Biagini.

Memberships

- Member of the Steering Committee of the GrEnFIn EMJM-Greening Energy Market And Finance, Erasmus Mundus Joint Master - `https://site.unibo.it/grenfin-emjm/en`;
- Member of the European Mathematical Society (EMS);
- Member of the Italian Mathematical Union (UMI);
- Member of the Association for Mathematics Applied to Social and Economic Sciences (AMASES);
- Member of the National Group for Mathematical Analysis, Probability and their Applications (GNAMPA), INdAM;

- Member of the Fintech Research Network - `https://www.fintechlab.it/network/`.

National Scientific Qualifications

- 2019 – present: Full Professor in the field of 13/STAT-04 (13/D4) - Mathematical Methods in Economics and Actuarial and Financial Sciences.

Academic Responsibilities

- 01/11/2019 - 31/08/2024: Member of the Department's Educational Committee, Department of Mathematics and Computer Science, University of Perugia.

Research Projects

Competitive Funding as PI

- 02/2015 - 02/2016: GNAMPA 2015 Project (INdAM) - *Equazioni differenziali stocastiche retrograde con informazione incompleta e applicazioni alla finanza*, **Project Leader**. Participants: C. Ceci, K. Colaneri.

Participation in Competitive Research Projects

- 29/09/2023 - 27/02/2026: PRIN 2022 Project - *Modeling and Valuation of Financial Instruments for Climate and Energy Risk Mitigation*, National Coordinator: L. V. Ballestra.
- 04/2024 - 08/2024: Extended Partnership SERICS (PNRR), PNRR M4.C2.1.3 Project funded by the European Union – NextGenerationEU - *Advanced and Quantum-safe Solutions for Digital Identity and Digital Tracing (AQuSDIT)*, Scientific Leader: S. Bistarelli.
- University Research Fund 2022 - University of Perugia, Argomentazione Astratta, Text Mining e Network Analysis per il Supporto alle Decisioni (RATIONALISTS) (Scientific Leader: F. Santini - project duration: 12 months).
- GNAMPA 2022 Project (INdAM) – *Problemi di riassicurazione e investimento ottimi per dinamiche di tipo Hawkes*, Project Leader: C. Ceci.
- University Research Fund 2021 - University of Perugia, AIDMIX-Artificial Intelligence for Decision making: Methods for Interpretability and eXplainability (Scientific Leader: G. Figà-Talamanca - project duration: 12 months).
- University Project 2021 - University "G. D'Annunzio" of Chieti - Pescara: *Problemi di controllo stocastico con osservazione completa e parziale ed applicazioni in ambito assicurativo ed economico* (PI: C. Ceci).
- 06/2021 – 12/2021: GNAMPA 2020 Project (INdAM) - *Una classe di problemi di ottimizzazione in ambito attuariale ed economico*, Project Leader: C. Ceci.
- University Project 2020 - University "G. D'Annunzio" of Chieti - Pescara: *Problemi di controllo stocastico e arresto ottimo e applicazioni in ambito assicurativo ed economico* (PI: C. Ceci).
- University Project 2019 - University "G. D'Annunzio" of Chieti - Pescara: *Problemi di controllo stocastico in informazione parziale con applicazione ai mercati finanziari e assicurativi e copertura del rischio di controparte in ambito assicurativo* (PI: C. Ceci).
- 07/2018 – 07/2022: Project funded by the Cassa di Risparmio Foundation of Perugia - Scientific and Technological Research: *Le sfide socio-economiche e di regolamentazione nel settore FinTech, all'incrocio tra tecnologia e finanza.* Project Leader: G. Figà-Talamanca.
- Research Project *RACRA18 - Knowledge Representation and Automated Reasoning 2018 - Rappresentazione della Conoscenza e Ragionamento Automatico 2018* - Fondi ricerca di Base 2018 (Scientific Leader: S. Bistarelli - project duration: 24 mesi (2018-2020).

- University Project 2018 - University "G. D'Annunzio" of Chieti - Pescara: *Problemi di controllo stocastico in informazione parziale: il problema della riassicurazione ottima e applicazioni alla gestione del debito pubblico* (PI: C. Ceci).
- 02/2017 – 02/2018: GNAMPA 2017 Project (INdAM) - *Prezzo di indifferenza e strategie di copertura ottimali per derivati assicurativi in contesto di informazione parziale*, Project Leader: K. Colaneri.
- 02/2016 – 02/2017: GNAMPA 2016 Project (INdAM) - *Il problema della copertura di titoli derivati soggetti a rischio di credito in informazione parziale*, Project Leader: C. Ceci.
- University Project 2017 - University "G. D'Annunzio" of Chieti - Pescara: *Valutazione di derivati assicurativi sulla vita unit-linked in contesto d'informazione parziale e copertura del rischio di controparte in ambito assicurativo e di rischio di credito* (PI: C. Ceci).
- 10/2015 – 03/2017: Project funded by the Cassa di Risparmio Foundation of Perugia – Scientific and Technological Research: *Analisi del sistema Bitcoin: modelli per la dinamica dei prezzi e l'interdipendenza dei mercati*, Project Leader: G. Figà-Talamanca.
- University Project 2016 - University "G. D'Annunzio" of Chieti - Pescara: *Copertura e valutazione di derivati soggetti a rischio di default in contesto d'informazione parziale* (PI: C. Ceci).
- University Project 2015 - University "G. D'Annunzio" of Chieti - Pescara: *The Föllmer-Schweizer decomposition in informazione parziale ed applicazioni alla Finanza* (PI: C. Ceci).
- 02/2014 – 02/2015: GNAMPA 2014 Project (INdAM) - *Strategie di copertura in mercati finanziari/assicurativi incompleti con informazione parziale*, Project Leader: K. Colaneri.
- University Project 2014 - University "G. D'Annunzio" of Chieti - Pescara: *Mercati finanziari in contesto d'informazione parziale, copertura e valutazione di derivati finanziari e assicurativi* (PI: C. Ceci).
- 24 months starting from 22/03/2010: PRIN 2008 Project - *Probabilità e Finanza*, National Coordinator: M. Frittelli.
- 24 months starting from 09/02/2007: PRIN 2006 Project - *Metodi di Ottimizzazione e Controllo per la Gestione del Debito Pubblico; Modelli Statici e Dinamici*, National Coordinator: F. Gozzi.

Funding and Awards

- 2017 - Admitted, as Associate Professor, to the *FFABR - Fondo per il Finanziamento delle Attività Base di Ricerca*.
- 2008 - LUISS Guido Carli Productivity Award (for the 2007/2008 biennium), received under the incentive program to promote publications in top international scientific journals.

Student Supervision

PhD Student Supervision

- 2019 - 2022: Benedetta Salterini (Supervised with Katia Colaneri), PhD in Mathematics, Computer Science, Statistics (Mathematics Curriculum), XXXV cycle, University of Florence-University of Perugia-INdAM. Thesis title: Optimal Investment and Reinsurance under Exponential Forward Preferences.

Master and Bachelor Student Supervision

- Supervisor of more than 20 master degree theses in Mathematics.
- Supervisor of more than 15 bachelor degree theses in Mathematics and Mathematical Finance.

Conference, Workshop, and Seminar Presentations

Conferences and Workshops

- 08-12/06/2026: *Stochastic evolution inclusions with nonlocal initial conditions*. Fifth Italian Meeting On Probability and Mathematical Statistics, Session " SPDEs in Finance", Palermo, 8-12 June, 2026. **Invited Speaker**.
- 11/06/2024: *Existence of nonnegative mild solutions of stochastic evolution inclusions via weak topology*. Fourth Italian Meeting On Probability and Mathematical Statistics, Session " Semilinear Stochastic Differential Equations in Infinite-Dimensional Spaces", Rome, 10-14 June, 2024.
- 03/10/2023: *Utility maximization for reinsurance policies in a dynamic contagion claim model* Oberwolfach Workshop 2340 - *New Challenges in the Interplay between Finance and Insurance* organizzato da Beatrice Acciaio (Zürich), Hansjörg Albrecher (Lausanne), Francesca Biagini (München), Thorsten Schmidt (Freiburg), Mathematisches Forschungsinstitut Oberwolfach, Germany, 1-6 October, 2023. **Invited Speaker**.
- 15/06/2022: *Optimal reinsurance and investment under exponential forward preferences*. Third Italian Meeting On Probability And Mathematical Statistics, Session "Advances in Stochastic Control with Applications", Bologna, 13-16 June, 2022. **Invited Speaker**.
- 27/05/2022: *Sentiment-based regimes for stock price volatility*. ICRA9 – 9th International Conference on Risk Analysis, Session "Risk and Opportunities in Financial Innovation", Perugia, 25-27 May, 2022. **Invited Speaker**.
- 17/07/2019: *Optimal investment and consumption in a Markov-modulated market with a longevity bond*. Minisymposium "Quantitative methods for insurance markets modeling", ICIAM 2019 - the 9th International Congress on Industrial and Applied Mathematics, Valencia, 15-19 July, 2019. **Invited Speaker**.
- 05/06/2019: *Indifference Pricing of Life Insurance Contracts in a Market with Longevity Bonds via BSDEs under Partial Information*. Minisymposium "Quantitative Methods in Insurance Market Modelling", FM19 - SIAM Conference on Financial Mathematics & Engineering, Toronto, Canada, 4-7 June, 2019. **Invited Speaker**.
- 15/12/2018: *Indifference pricing of life insurance contracts via BSDEs under partial information*. Conference in honor of Prof. Giulianella Coletti's 70th birthday, Department of Mathematics and Computer Sciences, University of Perugia and Palazzo Trinci (Foligno), 14-15 December, 2018.
- 19/09/2018: *Indifference pricing of life insurance contracts via BSDEs under partial information*. Joint Meeting UMI-SIMAI-PTM, Wrocław, Polonia, 17-20 September, 2018. **Invited Speaker**.
- 09/07/2018: *Bitcoin rise and fall and market exuberance*. EURO 2018 - 29th European Conference on Operational Research, Valencia, Spagna, 8-11 Luglio, 2018.
- 25/01/2018: *Indifference pricing of pure endowment life insurance contracts under partial information*. XIX Quantitative Finance Workshop, University of Roma Tre, 24-26 January, 2018.
- 15/09/2017: *Indifference pricing of pure endowment contracts under partial information*. XLI Meeting A.M.A.S.E.S., University of Cagliari, 14-16 Settembre, 2017.
- 10/09/2015: *The Föllmer-Schweizer decomposition under restricted information and financial applications* . XXXIX Meeting A.M.A.S.E.S., University of Padua, 10-12 September, 2015.
- 07/09/2013: *BSDEs under partial information and application to local risk-minimization*. XXXVII Meeting A.M.A.S.E.S., University of Insubria, Stresa, 5-7 September, 2013.
- 03/07/2013: *BSDEs under partial information*. XXVI EURO-INFORMS, 26th European Conference on Operational Research, "Sapienza" University of Rome, 1-4 July 2013. **Invited Speaker**.
- 24/01/2013: *Local risk-minimization under partial information via BSDEs*. XIV Workshop on Quantitative Finance, University of Bologna, Rimini Campus, 24-25 Gennaio, 2013.

- 11/09/2012: *Orthogonal decompositions and BSDEs under partial information. An application to (local) risk-minimization*. Final conference of the research project "Probabilità e Finanza" (PRIN 2008), University "G. D'Annunzio" of Chieti-Pescara, 10-12 Settembre, 2012. **Invited Speaker**.
- 26/01/2012: *Galtchouk-Kunita-Watanabe representation theorem under restricted information and application to risk-minimization*. XIII Workshop on Quantitative Finance, University of L'Aquila, 26-27 January, 2012.
- 13/09/2011: *Local risk-minimization under the benchmark approach*. XIX Congresso U.M.I., University of Bologna, 12-17 September, 2011.
- 02/09/2010: *Local risk-minimization under the benchmark approach*. XXXIV Convegno A.M.A.S.E.S., University of Macerata, 1-4 September, 2010.
- 13/11/2009: *Local risk-minimization under the benchmark approach*. LMUexcellent Symposium: Quantitative Finance and Insurance. Mathematics Department of LMU, München, 13 Novembre, 2009. **Invited Speaker**.
- 08/04/2009: *Optimal consumption policies in illiquid markets*. Giornata di Finanza Matematica, CNR-IMATI, Milan, 8 April, 2009. **Invited Speaker**.
- 03/09/2008: *Portfolio optimization under liquidity risk with random trading times: regularity results and optimal strategies*. XXXII Convegno A.M.A.S.E.S., University of Trento, 1-4 September, 2008.
- 07/05/2008: *Local risk-minimization for defaultable markets*. The 3rd General A.MA.ME.F. Conference, Pitești, Romania, 5-10 May, 2008.
- 03/09/2007: *Quadratic hedging methods for defaultable claims*. XXXI Meeting A.M.A.S.E.S., University of Lecce, 3-6 September, 2007.
- 25/01/2007: *Quadratic hedging methods for defaultable claims*. VIII Workshop on Quantitative Finance, University Ca' Foscari, Venice, 25-26 January, 2007.
- 18/08/2006: *Quadratic hedging methods for defaultable claims*. Bachelier Finance Society 2006, National Center of Sciences, Tokyo, 17-20 August, 2006.
- 16/09/2005: *Quadratic hedging methods for defaultable claims*. Stochastic Methods in Finance, Sapienza University of Rome, 15-17 September, 2005.
- 31/07/2005: *Quadratic hedging methods for defaultable claims*. The 2005 Abel Symposium: Stochastic Analysis and Applications, Oslo, 29 July - 4 August, 2005.

Invited Seminars

- 06/12/2021: *Optimal Reinsurance and Investment under Common Shock Dependence between the Financial and the Actuarial Market*. UMI-PRISMA Webinars, 6 December 2021.
- 21/04/2021: *The World of Crypto-finance: An Introduction to Blockchain and Cryptocurrencies*. Department of Economics, University "G. D'Annunzio" of Chieti-Pescara.
- 13/05/2019: *Indifference pricing of life insurance contracts via BSDEs under partial information*. Bachelier Finance Society Seminar. Mathematics Department of LMU, München.
- 01/10/2010: *Local risk-minimization under the benchmark approach*. Department of Sciences, University "G. D'Annunzio" of Chieti-Pescara.
- 19/05/2010: *Risk-minimization under the benchmark approach*. Department of Mathematics "F. Brioschi", Politecnico of Milan.
- 23/10/2009: *Local risk-minimization under the benchmark approach*. Groupe de Travail Méthodes Stochastiques et Finance ENPC - INRIA - UPEMLV. Laboratoire d'Analyse et de Mathématiques Appliquées, Université Paris-Est - Marne-la-Vallée, Noisy-Champs (Marne-la-Vallée).

Conference and Workshop Organization

- Member of the Organizing Committee of the *XXVIII Workshop on Quantitative Finance*, Pescara, 18-20 March, 2027.
- Co-organizer of the Special Session: *Modeling and Valuation of Financial Instruments for Climate and Energy Risk Mitigation* at the 49th Annual Conference of A.M.A.S.E.S., Florence, 11-13 September, 2025.
- Co-organizer of the Special Session: *Exploring uncertainty in financial modelling and quantitative risk management* at the 49th Annual Conference of A.M.A.S.E.S., Florence, 11-13 September, 2025.
- Member of the Organizing Committee of the Workshop: *Pescara Math Workshop 2024 (PMW24)*, Pescara, 9 November 2024.
- Co-organizer of the Special Session: *Modeling and Valuation of Financial Instruments for Climate and Energy Risk Mitigation* at the 48th Annual Conference of A.M.A.S.E.S., Ischia, 5-7 September, 2024.
- Organizer of the Special Session: *Semilinear Stochastic Differential Equations in Infinite-Dimensional Spaces* at the 4th Italian Meeting on Probability and Mathematical Statistics, Rome, 10-14 June, 2024
- Co-organizer of the Special Session: *The impact of sentiment and attention in financial markets: stocks, commodities and cryptocurrencies* at the 47-th Annual Conference of A.M.A.S.E.S., Milan, 20-22 September, 2023.
- Co-organizer of the Special Stream: *Stochastic Methods in Finance and Insurance* at the 45-th Annual Conference of A.M.A.S.E.S., Reggio Calabria, 13-18 September 2021.
- Co-organizer of the Special Session: *Cryptoassets and Blockchain: Economic and Computational Aspects* at the 43-rd Annual Conference of A.M.A.S.E.S., Perugia, 9-11 September, 2019.
- Member of the Organizing Committee of the 43-rd Annual Conference of A.M.A.S.E.S., Perugia, 9-11 September, 2019.
- Co-organizer of the *Stream Blockchain and Cryptocurrencies: Economic and Financial Challenges* (2 sessioni) at the conference "EURO 2019 - 30th European Conference on Operational Research", Dublin, 23-26 June, 2019.
- Co-organizer of the *Stream Blockchain and Cryptocurrencies: Economic and Financial Challenges* (2 sessions) at the Conference "EURO 2019 - 30th European Conference on Operational Research", Dublin, 23-26 June, 2019.
- Member of the Organizing Committee of the conference in honor of the Prof. Giulianella Coletti's 70th birthday, Department of Mathematics and Computer Sciences, University of Perugia and Palazzo Trinci (Foligno), 14-15 December, 2018.
- Co-organizer of the *Stream Fintech: Economic and Financial Challenges in Cryptocurrencies* (2 sessions) at the conference "EURO 2018 - 29th European Conference on Operational Research", Valencia, 8-11 July, 2018.
- Chair of the Session: *Insurance* at the "XIX Workshop on Quantitative Finance – QFW2018", University Roma Tre.
- Member of the Organizing Committee of the final conference of the research project PRIN 2008 "Probabilità e Finanza", University "G. D'Annunzio" of Chieti-Pescara, 10-12 September, 2012.
- Member of the Organizing Committee of "CP - 2011, The 17th International conference on Principles and Practice of Constraints Programming", Perugia, 12-16 September, 2011.

Editorial Activities

- 2025 – present: Guest Editor (with G. Figà-Talamanca, F. Lillo, M. Patacca, I. Romanova and V. Papavassiliou) Special Issue "Quantitative methods in Fintech: Bridging Theory and Practice", Decisions in Economics and Finance (ISSN (print): 1593-8883, (ISSN (online): 1129-6569).
- 2020 - present: Member of the Topical Advisory Panel for the section "Financial Mathematics" Mathematics (ISSN: 2227-7390) `https://www.mdpi.com/journal/mathematics`
- 2021 - 2023 Guest Editor (with K. Colaneri) Special Issue Information in Economics, Finance and Insurance: Modelling and Applications, Mathematics (ISSN: 2227-7390), `https://www.mdpi.com/journal/mathematics`
- 2019 – 2021: Guest Editor (with G. Figà-Talamanca and C. Grunspan) Special Issue Blockchain and Cryptocurrencies, Decisions in Economics and Finance (ISSN (print): 1593-8883, (ISSN (online): 1129-6569).

Peer-Review Activities

- Referee for the following journals: Annals of Actuarial Science, Applied Mathematical Finance, Applied Mathematics and Optimization, ASTIN Bulletin - The Journal of the International Actuarial Association, Computational Optimization and Applications, Decisions in Economics and Finance, European Journal of Operational Research, Finance and Stochastics, INFOR, Insurance: Mathematics and Economics (IME), International Journal of Financial Engineering and Risk Management (IJFERM), International Journal of General Systems, International Transactions in Operational Research, Journal of Industrial and Management Optimization (JIMO), Mathematical Finance, Mathematics and Financial Economics, Mathematics of Operations Research, North American Actuarial Journal, Revue Finance / Finance, Revue de l'Association Française de Finance, Scandinavian Actuarial Journal, SIAM Journal on Financial Mathematics, Statistics and Probability Letters, The European Journal of Finance.
- Reviewer per Mathematical Reviews (American Mathematical Society).
- Evaluation of book proposals for the series *SpringerBriefs in Finance*.

Evaluation Activities

- Member of the Selection Committee for the assignment of 1 research fellowship on Modelli economico/finanziari per la descrizione e la gestione dei rischi ambientali e sociali (UE - PNRR - PE9- Spoke 4 GRINS - CUP: E83C22004690001), Department of Economics and Finance, University of Rome "Tor Vergata". D.D. No. 3595/2024.
- Member of the Selection Committee for the assignment of 1 research fellowship on Evaluation of financial instruments for climate and energy – Financial instruments valuation for climate and energy, CUP: J53D23004540006, Junior category, Department of Economics, University of Perugia. D.R. No. 2294 dated 26.7.2024.
- Member of the Selection Committee for a fixed-term university researcher position pursuant to Article 24 - paragraph 3 - letter b) of Law 240/2010 – SC 13/D4 – SSD SECS-S/06, Department of Economics, University of Perugia – under the Second Extraordinary Plan 2020 as per Ministerial Decree 856/2020. Code: RTDB-2023-01 (Notice published in the Italian Official Gazette IV Special Series - Competitions and Exams No. 12 dated 14.2.2023). D.R. No. 115 dated 30.1.2023.
- Evaluation of FISR2020 Covid-19: assessment of two research project proposals under the Special Supplementary Research Fund (FISR), aimed at selecting proposals of significant strategic relevance designed to address the new challenges and issues arising from the spread of the SARS-CoV-2 virus and the Covid-19 infection.

Teaching Activities

Undergraduate and Graduate Classroom Teaching

- AY 2025/2026: *Matematica per l'Economia (modulo a e modulo b)*, BSc in Economia e Commercio, University "G. D'Annunzio" of Chieti-Pescara.
- AY 2025/2026: *Metodi Probabilistici per la Valutazione dei Derivati Finanziari*, MSc in Economia e Finanza, University "G. D'Annunzio" of Chieti-Pescara.
- AY 2025/2026: *Topics in Probability and Finance* (reading course), BSc in Economia e Commercio, University "G. D'Annunzio" of Chieti-Pescara.
- AY 2016/2017–2023/2024: *Mathematical Finance* (taught in English), MSc in Mathematics, University of Perugia.
- AY 2017/2018–2023/2024: *Matematica Finanziaria* (surnames M–Z), BSc in Economia Aziendale, University of Perugia.
- AY 2023/2024: *Probabilità e Statistica I – Part II*, BSc in Mathematics, University of Perugia.
- AY 2019/2020–2021/2022: *Probabilità e Statistica II – Modulo Probabilità*, MSc in Mathematics, University of Perugia.
- AY 2020/2021–2021/2022: *Probabilità e Statistica I – II Parte*, BSc in Mathematics, University of Perugia.
- AY 2017/2018–2018/2019: *Probabilità e Statistica per l'Investigazione*, MSc in Socio-Anthropological Sciences for Social Integration and Social Safety, University of Perugia.
- AY 2015/2016: *Matematica Generale*, BSc in Tourism Economics and Management, University of Perugia.
- AY 2015/2016: *Mathematical Models for Finance* (taught in English), MSc in Mathematics, University of Perugia.
- AY 2011/2012–2014/2015: *Modelli Matematici per la Finanza*, MSc in Mathematics, University of Perugia.
- AY 2010/2011: *Matematica Finanziaria*, BSc in Economia Aziendale (CLEA), BSc in Economia e Amministrazione per le Imprese (CLEAI), University "G. D'Annunzio" of Chieti-Pescara.

Teaching Activities for Doctoral Programmes

- AY 2019/2020: PhD Course in Mathematics, Computer Science and Statistics — University of Florence, University of Perugia, and INdAM.
  Title: Optimal Control and Applications — 20 hours.

Research Interests

- Stochastic Models in Finance and Insurance; Stochastic Control; BSDEs; Stochastic Evolution Equations; Mathematical Modeling of Cryptocurrencies and Digital Finance.

List of Publications

Papers on international journals

1) Cretarola A., Salterini B., Indifference pricing of pure endowments in a regime switching market model. *Applied Mathematical Finance*, Volume 32, Issue 3, pp. 157–190, 2025.

2) Ceci C., Cretarola A., Optimal reinsurance in a dynamic contagion model: comparing self-exciting and externally-exciting risks. *Quantitative Finance*, 1–21, 2025. `https://doi.org/10.1080/14697688.2025.2488450`

3) Colaneri K., Cretarola A., Salterini B., Optimal investment and reinsurance under exponential

forward preferences. *Mathematics and Financial Economics*, Volume 19, Issue 1, pp. 1–37, 2025.

4) Cretarola A., Figà Talamanca G., Patacca M., Option pricing in a sentiment-biased stochastic volatility model. *Annals of Finance*, Volume 21, Issue 1, pp. 69–95, 2025.

5) Cretarola A., Figà Talamanca G., Patacca M., Sentiment-driven mean reversion in the 4/2 stochastic volatility model with jumps. *Applied Stochastic Models in Business and Industry*, Volume 40, Issue 2, 2024.

6) Ceci C., Cretarola A., Utility maximization for reinsurance policies in a dynamic contagion claim model. In: "New Challenges in the Interplay between Finance and Insurance", *Oberwolfach Reports*, Volume 20, Issue 4, pp. 2623-2625, 2023. `https://doi.org/10.4171/OWR/2023/44`.

7) Ceci C., Colaneri K., Cretarola A., Optimal reinsurance and investment under common shock dependence between financial and actuarial markets. *Insurance: Mathematics and Economics*, Volume 105, pp. 252-278, 2022.

8) Cretarola A., Figà Talamanca G., Detecting bubbles in Bitcoin price dynamics via market exuberance. *Annals of Operations Research*, Volume 299 (1-2), pp. 459-479, 2021.

9) Cretarola A., Figà Talamanca G., Grunspan, C., Blockchain and cryptocurrencies: economic and financial research. *Decisions in Economics and Finance*, Volume 44, pp. 781-787, 2021.

10) Colaneri K., Cretarola A., Salterini B., Optimal investment and proportional reinsurance in a regime-switching market model under forward preferences. *Mathematics*, Volume 9, Issue 14, Article n. 1610, 2021.

11) Ceci C., Colaneri K., Cretarola A., Indifference pricing of pure endowments via BSDEs under partial information. *Scandinavian Actuarial Journal*, Volume 2020, pp. 904-933, 2020.

12) Cretarola A., Figà-Talamanca G., Bubble regime identification in an attention-based model for Bitcoin and Ethereum price dynamics. *Economics Letters*, Volume 191, 2020.

13) Cretarola A., Figà-Talamanca G., Patacca M., Market attention and Bitcoin price modeling: theory, estimation and option pricing. *Decisions in Economics and Finance*, Volume 43, pp. 187-228, 2020.

14) Bistarelli S., Cretarola A., Figà-Talamanca G., Patacca M., Model-based arbitrage in multi-exchange models for Bitcoin price dynamics. *Digital Finance*, Volume 1, pp. 23-46, 2019.

15) Ceci C., Colaneri K., Cretarola A., Unit-linked life insurance policies: optimal hedging in partially observable market models. *Insurance: Mathematics and Economics*, Volume 76, pp. 149-163, 2017.

16) Ceci C., Colaneri K., Cretarola A., The Föllmer-Schweizer decomposition under incomplete information. *Stochastics: An International Journal of Probability and Stochastic Processes* Volume 89, Issue 8, pp. 1166-1200, 2017.

17) Ceci C., Colaneri K., Cretarola A., Local risk-minimization under restricted information on asset prices. *Electronic Journal of Probability*, Volume 20, Issue 96, pp. 1-30, 2015.

18) Ceci C., Colaneri K., Cretarola A., Hedging of unit-linked life insurance contracts with unobservable mortality hazard rate via local risk-minimization. *Insurance: Mathematics and Economics*, Volume

60, pp. 47-60, 2015.

19) Ceci C., Cretarola A., Russo F., BSDEs under partial information and financial applications. *Stochastic Processes and their Applications*, Volume 124, Issue 8, pp. 2628-2653, 2014.

20) Biagini F., Cretarola A., Platen E., Local risk-minimization under the benchmark approach. *Mathematics and Financial Economics*, Volume 8, Issue 2, pp. 109-134, 2014.

21) Ceci C., Colaneri K., Cretarola A., A benchmark approach to risk-minimization under partial information. *Insurance: Mathematics and Economics*, Volume 55, pp. 129-146, 2014.

22) Ceci C., Cretarola A., Russo F., GKW representation theorem under restricted information. An application to risk-minimization. *Stochastics and Dynamics*, Volume 14, Issue 2, pp. 1350019 (23 pages), 2014.

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28) Cretarola, A., Figà-Talamanca, G., Modeling Bitcoin price and bubbles. In *Blockchain and Cryptocurrencies*, Salman, A. (Ed.), London:InTechOpen, ISBN: 978-1-83881-208-9, Chapter 1, pp. 3-20, 2018. `https://doi.org/10.5772/intechopen.79386`.

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Papers under review

- Angelini L., Benedetti I., Cretarola A., Existence of nonnegative mild solutions of stochastic evolution inclusions via weak topology. `https://arxiv.org/abs/2508.17287`
- Ceci C., Cretarola A., Self-protection and self-insurance for general risk models via a BSDE approach. `https://arxiv.org/abs/2507.19959`.
- Colaneri K., Cretarola A., Lombardo E., Mancinelli D., Design and hedging of unit linked life insurance with environmental factors. `https://arxiv.org/abs/2509.05676`
- Cretarola A., Figà-Talamanca, G., Patacca, M., Asset pricing with regime-sensitive volatility and

jumps.

Maternity Leaves

- 13/07/2025 - 31/07/2025: *Special leave for parental leave* under Art. 37 of the D.P.R. n. 3/1957.
- 12/02/2025 - 12/07/2025: *Mandatory maternity leave* under Art. 4 of Law 30.12.1971, n. 1204, Art. 12 of Law 8.3.2000, n. 53, and Art. 16 of D.L.vo 151/2001.
- 16/01/2023 - 27/02/2023: *Special leave for parental leave* under Art. 37 of the D.P.R. n. 3/1957.
- 15/07/2022 - 15/12/2022: *Mandatory maternity leave* under Art. 4 of Law 30.12.1971, n. 1204, Art. 12 of Law 8.3.2000, n. 53, Art. 16 of D.L.vo 151/2001, and in light of the INPS circular n. 148 of 12.12.2019 concerning "Period of compensated maternity leave. Option to refrain from work only after childbirth and within five months following. Operational instructions".
- 07/01/2020 - 20/02/2020: *Special leave for parental leave* under Art. 37 of the D.P.R. n. 3/1957.
- 02/08/2019 - 06/01/2020: *Mandatory maternity leave* under Art. 4 of Law 30.12.1971, n. 1204, Art. 12 of Law 8.3.2000, n. 53, and Art. 16 of D.L.vo 151/2001.
- 16/01/2017 – 28/02/2017: *Special leave for parental leave* pursuant to art. 37 of D.P.R. n. 3/1957.
- 30/07/2016 – 30/12/2016: *Compulsory maternity leave* pursuant to article 4 of the law 30.12.1971, n. 1204, of art. 12 of the law 8.3.2000, n. 53 and of the art. 16 of D.L.vo 151/2001.
- 26/01/2014 – 26/06/2014: *Compulsory maternity leave* pursuant to article 4 of the law 30.12.1971, n. 1204, of art. 12 of the law 8.3.2000, n. 53 and of the art. 16 of D.L.vo 151/2001.

La sottoscritta dichiara, ai sensi degli artt. 46 e 47 del D.P.R. 445/2000, che le informazioni riportate nel presente curriculum vitae sono veritiere e corrette, ed è consapevole delle sanzioni penali previste dall'art. 76 del medesimo D.P.R. in caso di dichiarazioni mendaci.

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