

ANDREA MAZZON

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RESEARCH INTERESTS

Model uncertainty, asset price bubbles, local martingales, extreme value theory, climate finance.

ACADEMIC OCCUPATIONS

Akademischer Rat auf Zeit (Lecturer / Academic Councillor) 2020 - Ongoing

Ludwig-Maximilians-Universität München

Department of Mathematics

Research Fellow (Postdoc) 2019 - 2020

Ludwig-Maximilians-Universität München

Department of Mathematics

Doctoral Research Fellow 2014 - 2018

Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste, Italy, in collaboration with Gran Sasso Science Institute (GSSI), l'Aquila, Italy

Title of the PhD thesis: *Asset price bubbles in Financial networks*

Thesis advisors: Prof. Dr. Francesca Biagini and Prof. Dr. Thilo Meyer-Brandis, LMU München

Scholarship 2014

University of Bologna, Department of Mathematics

Title of the project: *Asymptotic expansions of the forward implied volatility*

Advisor: Prof. Dr. Andrea Pascucci, University of Bologna

EDUCATION

Post Graduate Course in Quantitative Finance 2013 - 2014

University of Bologna

30/30 with honors

Laurea Magistrale (Master's degree, MSc), Mathematics 2009 - 2012

University of Bologna, Department of Mathematics

110/110 with honors

Master Thesis: *The Square Root Process*, supervised by Prof. Dr. Andrea Pascucci.

Laurea Triennale (Bachelor's Degree, BSc) in Mathematics 2005 - 2008

University of Bologna, Department of Mathematics

104/110

Bachelor Thesis: *Attacks to the RSA system*, supervised by Prof. Dr. Davide Aliffi.

OTHER ACTIVITIES

GrEnFIn Project

Project manager for the Ludwig-Maximilians-Universität München 2019-2022

Member of the Quality Board 2021-2022

The project is funded by Knowledge Alliance, Erasmus+ and supported by the European Union.

The goal is to create a Joint Master Degree in Green Energy and Finance targeting young students.

The collaboration includes seven academic partners and seven industry partners from Europe.

For further informations please visit the GrEnFIn website

Website administrator for the Workgroup Financial Mathematics at LMU 2018-ongoing
Main duties are: helping to organize the website in the most convenient and user friendly way, posting news and announcements, updating the lectures's webpages if needed.

WakeUpCall European Industrial Doctorates (EID) project
Collaborator for the University of Bologna

2014

The project has been funded in the Horizon2020 framework.

It is a Marie-Curie initiative in which six Early Stage Researchers (ESRs, like PhDs) work closely with industrial partners on a PhD Thesis in applied mathematics.

For further informations please visit the WakeUpCall website

Referee for peer reviewed journals:

Bernoulli Journal, Springer Mathematics Books

Involved in the organization of:

- First Munich Climate School
- LMU Spring Workshop in Stochastics and Finance
- LMU Versicherungsmathematisches Kolloquium

Contributor of the Finmath Java Library:

<https://github.com/finmath>

PUBLICATIONS

- Akhtari, B., Biagini, F., Mazzon, A., Oberpriller, K., Generalized Feynman-Kac Formula under volatility uncertainty, *Stochastic Processes and Their Applications*, In Press, 2023. [Link](#).
- Biagini, F., Mazzon, A., Oberpriller, K., Reduced-form framework for multiple default times under model uncertainty. *Stochastic Processes and Their Applications*, 156, 1-43, 2022. [Link](#).
- Biagini, F., Mazzon, A., Perkkiö, A.-P., Optional projection under equivalent local martingale measures, *Accepted for publication in Finance and Stochastics*, 2023. [Link](#).
- Biagini, F., Huber, T., Jaspersen, J. G., and Mazzon, A., Estimating Extreme Cancellation Rates in Life Insurance, *Journal of Risk and Insurance*, 88(4): 971-1000, 2021. [Link](#).
- Biagini, F., Mazzon, A., Meyer-Brandis, T., Financial asset bubbles in banking networks, *SIAM Journal on Financial Mathematics*, 10(2): 430-465, 2019. [Link](#).
- Biagini, F., Mazzon, A., Meyer-Brandis, T., Liquidity induced asset bubbles via flows of ELMs, *SIAM Journal on Financial Mathematics*, 9(2), 800-834, 2018. [Link](#).
- Mazzon, A., Pascucci, A., The forward smile in local-stochastic volatility models, *Journal of Computational Finance*, 20(3): 1-29, 2015. [Link](#)

Preprints

- Biagini, F., Gonon, L., Mazzon, A., Meyer-Brandis, T., Detecting asset price bubbles using deep learning. *Preprint*, 2022, [Link](#).
- Biagini, F., Mazzon, A., Meyer-Brandis, T., Oberpriller, K., Liquidity based modeling of asset price bubbles via random matching. *Preprint*, 2022, [Link](#).

TALKS

Invited talks

- ICIAM 2019, Valencia, Spain, June 2019: “Liquidity induced asset bubbles via flows of ELMs”
- ICCF Wuppertal 2022, Wuppertal, Germany, June 2022: “Bubbles detection from option prices via machine learning techniques”
- AMaMeF Conference 2022, Palermo, September 2022: “Generalized Feynman-Kac formula under volatility uncertainty”
- Seminar at the University California Santa Barbara, United States, November 2022: “Detecting asset price bubbles using deep learning”
- LPSM Seminar on Mathematical finance and numerical probability, Paris, France, January 2023: “Detecting asset price bubbles using deep learning”
- MathFinance Conference, Frankfurt, Germany, March 2023: “Detecting asset price bubbles using deep learning”
- Paris Bachelier Seminar, Paris, France, March 2023: “Reduced-form framework for multiple ordered default times under model uncertainty”

Other talks

- Quantitative Finance Workshop 2019, Zürich, Switzerland, January 2019: “Liquidity induced asset bubbles via flows of ELMs”
- 12th International Workshop on Stochastic Models and Control, Cottbus, Germany, March 2019: “Financial asset bubbles in banking networks”
- CEQURA Conference 2019, Munich, Germany, September 2019: “Financial asset bubbles in banking networks”
- AMaMeF Conference 2021, Online, June 2021: “Optional projection under equivalent local martingale measures”
- GrEnFin Project Final Conference, Bologna, Italy, October 2022: “Optimal portfolio choice under climate risk and model” uncertainty”

TEACHING EXPERIENCE

- **Teaching assistant at LMU München for the courses:**
 - Numerical Methods for Financial Mathematics (2019, 2020, 2021, 2022)
 - Computational Finance and its Object Oriented Implementation (2018/19, 2019/20, 2020/21, 2021/22, 2022/23)
 - Mathematik im Querschnitt (2017)
- **Lecturer at LMU München of the courses:**
 - Introduction to Object-Oriented Programming in Java (2019, 2020, 2021, 2022)
 - Computational Finance and its implementation in Python with applications to option pricing (2021, 2022, 2023)
 - Risk measures and Portfolio optimization (2020)
 - Optimal stochastic control with applications in finance (2018)
- **Lecturer at the First GrEnFin Summer School of the course:**

- Climate risk and Model uncertainty
- **Lecturer at the Second GrEnFIn Summer School of the course:**
 - Climate risk management in finance: Risk measures under model uncertainty
- **Lecturer at the First GrEnFIn Full Immersion Experience of the course:**
 - Time series analysis with application to Green energy markets
- **Lecturer at the First GrEnFIn Summer Training of the course:**
 - Net Present Value, Internal Rate of Return, Cost-Benefit Analysis, Business Planning
- **Lecturer at the First Munich Climate School of the course:**
 - Risk Assessment and Climate Change
- **Lecturer at the Second Munich Climate School of the course:**
 - Interest Rates and Risk in the context of Climate Models

CO-SUPERVISIONS

- Co-supervision of MSc thesis of Niya Stoyanova. Thesis title: *The Nature of ESG Risk Factors and their Incorporation in contemporary Market Risk Models*
- Co-supervision of MSc thesis of Andrea del Giudice. Thesis title: *Neural Networks for Option Pricing and Local Volatility Calibration*
- Co-supervision of MSc thesis of Riccardo Luiso. Thesis title: *Rolling the DICE: Java implementation of the DICE model with stochastic interest rates and negative emission technologies*
- Co-supervision of MSc thesis of Resul Deniz. Thesis title: *Liquidity induced asset bubbles in Financial networks*
- Co-supervision of MSc thesis of Clement Jerro. Thesis title: *Robustness in the optimization of Risk measures*
- Co-supervision of MSc thesis of William Wang. Thesis title: *Machine learning with Kernels for Portfolio valuation and Risk management*
- Co-supervision of MSc thesis of Alberto Zanon. Thesis title: *Dynamic refinement of the Time Homogeneous Term-Structure Modelling*
- Co-supervision of MSc thesis of Nono Line Henri. Thesis title: *Estimating Extreme Cancellation Rates in Life Insurance*
- Co-supervision of MSc thesis of Guglielmo del Sarto. Thesis title: *A review of interest rate modeling and discounting in the context of climate models*
- Co-supervision of MSc thesis of Michael Gerck. Thesis title: *Climate Risk Under Model Uncertainty*
- Co-supervision BSc thesis of Hoang Anh Nguyen. Thesis title: *Risk Measures and Capital Requirements for Processes*
- Co-supervision BSc thesis of Simon von Lippe. Thesis title: *On the Andersen-Broadie algorithm for pricing American options*
- Co-supervision of MSc thesis of Ralitsa Marinova. Thesis title: *Liquidity induced asset bubbles via flows of Equivalent Local Martingale Measures*
- Co-supervision of BSc thesis of Shanfeng Huang. Thesis title: *Robustness in the optimization of Risk measures*

- Co-supervision of BSc thesis of Michael Gerk. Thesis title: *Loss based risk measures*
- Co-supervision of BSc thesis of Kornel Wendt. Thesis title: *Liquidity risk theory and coherent measures of risk*
- Co-supervision of BSc thesis of Beatrix Schmitt. Thesis title: *Risk Preferences and their Robust Representation*

LANGUAGES

Italian: Mother tongue; *English*: Fluent; *German*: Good.

PROGRAMMING SKILLS

Extensive experience with Java, Python, Matlab and Mathematica programming, good knowledge of C++.