Massimo Capuano

Home : [redacted]

[redacted]

Website: https://www.researchgate.net/profile/Massimo-Capuano

LinkedIn: https://www.linkedin.com/in/mascapuano/ **Github:** https://github.com/capuanomassimo

Gender: Male **Date of birth:** 10/03/2003 **Place of birth:** **Nationality:** Italian

PUBLICATIONS

[2026] **ESG²: Integrating Geopolitical Risk into the Sustainability Framework**

Reference: Caresana, A., & Capuano, M. (2026). ESG²: Integrating Geopolitical Risk into the Sustainability Framework. Manuscript submitted for the Gasperini ESG Awards 2026.

Original research paper submitted for the "Gasperini ESG Awards 2026", currently under review by the scientific committee chaired by Prof. Stefano Zambon.

Authors: Andrea Caresana, Massimo Capuano | **Publisher**: EFFAS

[2026] **Towards a systemic risk framework for digital assets: taxonomy and pricing of stablecoins**

Reference: Bisceglia, G. M., & Capuano, M. (2026)

Development of a methodological framework for the taxonomy and measurement of systemic risks applied to stablecoins. Introduction of a unified pricing model based on the weighted average between the on-peg value and the recovery value. The model dynamically adapts to different collateral structures, translating into a credit risk assessment for fiat-backed tokens, a short put option structure for crypto-backed models, and a continuous time-decay equation for algorithmic mechanisms.

Authors: Grazia Maria Bisceglia, Massimo Capuano

[2026] **Deep Dive into Société Générale Trading Scandal: Systemic Risk, Control Failures, and the Limits of Modern Risk Management**

Reference: Capuano, M., De Gregori, V., & Mariani, F. (2026). Deep Dive into Société Générale Trading Scandal: Systemic Risk, Control Failures, and the Limits of Modern Risk Management. Preprint.

Structural, operational, and technological analysis of the unauthorized trading case at Société Générale (2008). Examination of failures within internal control systems and quantitative risk management models, with a specific focus on the reliance on automated processes, flaws in the segregation of duties, and the impact of corporate culture on operational and systemic risk management.

Authors: Massimo Capuano, Valentina De Gregori, Federico Mariani

[2025] **Black-Scholes PDE Resolution via Heat-Kernel Analysis Numerical Methods and Physics-Informed Neural Networks**

Reference: Capuano, M., Spera, L. (2025). Black-Scholes PDE Resolution via Heat-Kernel Analysis Numerical Methods and Physics-Informed Neural Networks. Preprint.

Comparative study for the resolution of the Black-Scholes partial differential equation (PDE) using three distinct approaches: analytical (transformation into the heat equation via heat-kernel analysis), numerical (implementation of finite difference schemes), and financial machine learning (utilizing Physics-Informed Neural Networks PINNs to integrate mathematical constraints into the deep learning architecture).

Authors: Massimo Capuano, Lorenzo Spera

[2025] **Pricing Asian Options: A Comparison Between Monte Carlo Method and Feedforward Neural Network**

Reference: Capuano, M. (2025). Pricing Asian Options: A Comparison Between Monte Carlo Method and Feedforward Neural Network. Preprint.

Evaluation of computational efficiency and accuracy in pricing Asian options, which lack closed-form analytical solutions. Development and detailed comparison between the traditional stochastic

approach based on Monte Carlo simulation and a data-driven predictive model based on a Feedforward Neural Network (FFNN).

Authors: Massimo Capuano

EDUCATION AND TRAINING

[28/10/2026 – Current]

PhD Student in Economics and Finance

Università Cattolica del Sacro Cuore (Campus di Milano)

City: Milano | **Country:** Italy | **Level in EQF:** EQF level 8

[09/09/2024 – 07/10/2026]

Master of Science in Banking and Finance

Università Cattolica del Sacro Cuore (Campus di Milano)

City: Milano | **Country:** Italy | **Final grade:** 110 cum laude/110 | **Level in EQF:** EQF level 7 | **Thesis:** Pricing Asian Options on Crude Oil: A Comparative Study Using Monte Carlo Simulation, Neural Networks, and Generative Adversarial Models

Major: Trading and Risk Management

Supervisor: Prof. Alice Pignatelli di Cerchiara

Extracurricular activities: Head of Asset Management at UCFA Finance Society (former Associate in Risk Management desk and Director in Global Markets). Promoted in recognition of outstanding performance and results.

[23/09/2025 – 15/02/2026]

Erasmus Program

Kozminski University

City: Varsavia | **Country:** Poland | **Level in EQF:** EQF level 7

Courses taken: Portfolio Analysis(4/5), Advanced Corporate Finance (5/5~30L), Corporate Governance(5/5~30L), Derivatives Valuation and Advanced Risk Management(4/5), Innovation in Investment Appraisal (5/5~30L)

[08/07/2024 – 19/07/2024]

Advanced Risk and Portfolio Management ARPM Bootcamp 2024

ARPM - Advanced Risk and Portfolio Management https://www.arpm.co/

City: New York | **Country:** United States

[09/09/2021 – 16/07/2024]

Bachelor's Degree in Business Administration

Università degli Studi di Perugia

City: Perugia | **Country:** Italy | **Final grade:** 110/110 cum laude | **Level in EQF:** EQF level 6 | **Thesis:** Credit default swap e gestione del rischio: il caso "London Whale" 10 anni dopo.

Supervisor: Prof. Paola Musile Tanzi

Winner of the selection process for part-time student collaboration at the Department of Economics Academic Office. Activities performed: information and orientation service for students, assistance during graduation sessions, and management of student careers and internships.

Extracurricular activities: Student Representative on the Department Board, the Undergraduate Studies Committee, and the Joint Faculty-Student Committee. Represented student interests, contributing to academic and organizational decision-making processes. Facilitated communication between faculty and students, ensuring that feedback and proposals were addressed effectively.

[09/09/2016 – 02/07/2024]

High School Diploma

Liceo Scientifico G.Galilei

City: Terni | **Country:** Italy | **Final grade:** 100/100 | **Level in EQF:** EQF level 4

Cambridge IGCSE Certifications: Mathematics (code 0580) and Geography (code 0460).

Extracurricular activities: Co-development and maintenance of the school website using Joomla and Java; configuration of templates, modules, and user permissions.

WORK EXPERIENCE

FinecoBank

Country: Italy

[04/2026 – Current]

Wealth Management & Private Banking Intern

Operational support for advanced financial advisory, asset allocation, and wealth planning activities for High-Net-Worth Individuals (HNWIs). Analysis and monitoring of clients' investment portfolios using risk/return metrics and construction of detailed performance reports. Preparation of

comparative analyses and screening of financial instruments (mutual funds, SICAVs, ETFs, certificates, and insurance solutions) through the use of information platforms and proprietary software. Support in preparing investment proposals and documentation for committees and client meetings, ensuring compliance with regulations and corporate guidelines. Monitoring of market trends and global macroeconomic dynamics to identify tactical opportunities or portfolio rebalancing options.

Università degli Studi di Perugia - Dipartimento di Economia

City: Perugia | **Country:** Italy

[10/2023 – 12/2023] **Administrative and Academic Support Assistant**

Selected as the winner of the selection process for part-time student collaboration based on a merit ranking determined by academic average and completed university credits (CFUs). Operational support for Academic Office activities, with a focus on the administrative management of student careers, Erasmus Office procedures, and curricular internship processes. Front-office activities for student information and orientation services, providing assistance and guidance for resolving bureaucratic and study plan issues. Coordination and logistical-administrative support during Department graduation sessions.

HONOURS AND AWARDS

[10/06/2026] **Finalist at the "UniversiPA" Award - A contest to reimagine the public sector Awarding institution:** FORUM PA

Selected as a finalist in the national "UniversiPA" contest by FORUM PA, aimed at gathering innovative ideas to modernize the Public Administration. Reached the final stage as co-author of the project: "Previdenza liquida e patto intergenerazionale: verso un nuovo modello di welfare".

LANGUAGE SKILLS

Mother tongue(s): Italian

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION C1 **SPOKEN INTERACTION** C1

Spanish

LISTENING B1 **READING** B1 **WRITING** B1

SPOKEN PRODUCTION B1 **SPOKEN INTERACTION** B1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

SKILLS

Python (computer programming) | Padronanza del Pacchetto Office (Word Excel PowerPoint ecc) | Utilizzo browser e posta elettronica | SQL | R | use word processing software | LaTeX e sottoclassi come Beamer(base)

CERTIFICATIONS

[McKinsey & Company, 17/12/2024] **McKinsey & Company Forward Program**

Mode of learning: Online

Link: https://www.credly.com/badges/b4e361f0-030d-435a-ad7e-72c942a5bf2b/public_url

[Bloomberg, 22/01/2025] **Bloomberg Bloomberg Market Concepts**

Mode of learning: Blended

Link: https://portal.bloombergforeducation.com/certificates/6tNpJTc7jWkTtXMXgA3isAJ8

[Generali, 07/02/2025] **Training Session Generali**

Mode of learning: Presential

SOCIAL AND POLITICAL ACTIVITIES

[01/09/2023 – 01/06/2025] **UniSmart - Direzione Studenti** Perugia

As student representative, I was committed to directing students to resources and opportunities that enrich the university experience. I listened to their needs, gathered feedback, and promoted events, building meaningful connections to foster personal and professional growth.

Member of the Department Board

Member of the Degree Course Board (Inter-course)

Member of the Joint Faculty-Student Committee

HOBBIES AND INTERESTS

Film Blog Founder

Founder of the "Hogstalle" blog (from January 2024 to present). Manage and coordinate an editorial project with a team of 6 writers, overseeing the drafting and publication of reviews, essays, and critical insights on classic and contemporary films.

Link: https://hogstalle.wordpress.com/

DRIVING LICENCE

Motorbikes: AM
Cars: B

DICHIARAZIONE SOSTITUTIVA DI ATTO NOTORIO

art. 19 e art. 47 D.P.R. 28 dicembre 2000 n. 445

I, Massimo Capuano, Fiscal Code [redacted] in Terni (TR) on 10/03/2003 and residing in [redacted], being aware of the criminal liability and the consequent penalties that may be incurred in the event of untruthful statements, forgery, or the use of forged documents, pursuant to Art. 76 of Presidential Decree No. 445/2000, as well as the forfeiture of any benefits obtained as a result of measures issued on the basis of untruthful statements, as provided for by Art. 75 of Presidential Decree No. 445/2000, hereby declare that the information contained in this curriculum vitae is true and accurate.