

Dario Partipilo

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Executive Director – Quantitative Risk & Trading Models – Goldman Sachs Quantitative Modelling, Market & Counterparty Risk, AI & Innovation

Executive Director in the Risk Division at Goldman Sachs with a Ph.D. in Physics, a Master in Applied Mathematics, a proven track record in quantitative research, risk management, and client execution trading risk, and experience in building and implementing models for risk hedging, interest rates, initial margin, price impact, and execution and clearing risk.

Entrepreneurial, solution-driven, and quick to learn, with a strong foundation in physics and mathematics supported by independent research and peer-reviewed publications, this collaborative partner combines technical expertise with patience, open-mindedness, and the ability to lead, influence, and mentor across teams.

With a keen interest in personal and professional development, a highly personal individual skilled in programming, handling large datasets, and applying AI and data science to complex financial and mathematical problems, with the ability to summarise and clearly communicate intricate model details to both technical and non-technical stakeholders.

Skills

Quantitative Finance	Stochastic risk models, market microstructure, counterparty & Prime Brokerage risk.
Advanced Mathematics	Optimization, multivariate systems, statistical modeling.
Machine Learning & Algorithms	ML, genetic algorithms, real-time systems, FPGA programming.
Programming	Python, Mathematica, LaTeX; Git, IntelliJ, PyCharm, Visual Studio.
Risk Management	Analytics in backtesting, monitoring, reporting to senior stakeholders.
Research Expertise	String theory, supergravity, theoretical physics.
Executive Leadership	Executive management, start-up founder, cross-cultural collaboration.
Stakeholder Engagement	Leads collaboration across broad groups as a go-to technical partner.
Teaching & Mentoring	Physics/mathematics tutoring and knowledge transfer.
Communication	Ability to summarise and articulate complex concepts to untrained ears.
Languages	Italian (Native), English (Advanced), French (Beginner)

Career History

October 2022 – Present **GOLDMAN SACHS INTERNATIONAL — London, UK** Jan 2024 – Present
Executive Director – Risk Strats

- Leading the development of stochastic risk models across the firm's trading book, enhancing market and counterparty risk assessment, while building and maintaining firm-wide models for Hedge Fund and institutional client risk.
- Designing and implementing price impact and liquidation cost models across asset classes, incorporating market microstructure dynamics (square root law, impact decay, bid-ask spread widening in rates and credit).
- Delivering backtesting frameworks, monitoring tools, and reporting dashboards to senior management, partners, and the CRO, and partnering across teams to translate quantitative insights into actionable risk management strategies.

Achievements

- ✓ **Enabled more reliable risk limits** and stronger firm-wide risk management by developing and delivering a firm-wide metric to assess strategy concentrations among hedge fund counterparties.
- ✓ **Designed price impact models** across equities, rates, FX, crypto, and credit, now adopted as the firm's reference for liquidation costs in stressed scenarios and widely used across divisions, regulators, and central banks.
- ✓ **Fast-tracked promotion** to Vice President after one year, recognising strong technical delivery and impact.

Associate – Risk Strats Oct 2022 – Dec 2023

- Analyzed risk data and developed new metrics. Implemented algorithms to optimize Prime Brokerage risk assessment. Delivered analytics and reporting (Python).

July – October 2022 **HIGH-TECH XL, Eindhoven, Netherlands**
Founder

- Established an early-stage start-up for photonic switches in data centres, leading concept and business development.
- Pitched the firm to various investors and left it in a position where it is now seeking potential clients.

July – November 2022 ITALIAN MINISTRY OF ECONOMIC DEVELOPMENT, Rome, Italy
Consultant

- Consulted on AI and emerging technologies, advising on AI-driven economic development strategies.

2017 – 2018 ESIM GROUP, Bari, Italy
Data Analyst & Software Developer

- Developed algorithms for train control systems.
- Self-taught FPGA programming and programmed FPGA for real-time rail condition monitoring.
- Conducted lab testing of tech equipment and produced documentation.

2014 – 2016 UNIVERSITY OF PISA, Pisa, Italy
Tutor

- Taught Physics and Mathematics to university and high school students, focusing on core subjects, such as Analysis, Classical Mechanics, Quantum Mechanics, Electromagnetism, Nuclear Physics, Special Relativity, Lagrangian and Hamiltonian mechanics, Chemistry.

Education & Professional Development

MITx: Machine Learning with Python Massachusetts Institute of Technology - MITx Sep 2025 – Dec 2025
- An in-depth introduction to the field of machine learning, from linear models to deep learning and reinforcement learning, through hands-on Python projects - Part of the MITx MicroMasters program in Statistics and Data Science.

Ph.D. in Physics University of Padua, Padua, Italy Nov 2018 – Jun 2022
- Research in String Theory and Supergravity, applying cryptographic techniques to Supergravity.
- Used Machine Learning algorithms, genetic algorithms and optimization methods to solve highly non-linear multivariate systems of equations for the identification of vacua in low energy String Theory realizations.
- Served as Ph.D. rep. in academic councils and was an INFN member.

Master in Applied Mathematics - Distinction University of Cambridge, Cambridge, UK Oct 2016 – Jun 2017
- Part III of the Mathematical Tripos
- Thesis: The Theta Angle in Gauge Theories. Member of CUPS.

Bachelor in Physics University of Pisa, Pisa, Italy Oct 2013 – Jul 2016
- Graduated 110/110 magna cum Laude. Thesis: The Unruh Effect.

Publications

"Old and New Vacua of 5D Maximal Supergravity", *JHEP*, 2021.

"New Methods for Old Problems: Vacua of Maximal $D = 7$ Supergravities", *JHEP*, 2022 - applied machine learning techniques to high energy theoretical physics - <https://inspirehep.net/literature/2080617>.

"(Machine) Learning Supergravity Vacua", 2022.

Domain Knowledge

Finance

- Market microstructure (bid-ask spreads, impact decay, square root law).
- Risk management and reporting to senior stakeholders.
- Prime Brokerage, market risk, and counterparty risk.

Physics & Applied Mathematics

- Theoretical physics (string theory, supergravity, gauge theories).
- Quantum mechanics, electromagnetism, relativity, classical mechanics.
- Cryptographic methods in physics applications.

Engineering

- Train control algorithms and real-time monitoring systems.
- Lab testing & documentation for safety-critical systems.

Emerging Tech

- AI/ML applications in physics and risk modelling.
- Photonics (start-up experience in optical switches for data centres).
- Policy advising on AI and economic development.

Interests

Scouting, sailing, spending time with friends, working out, FC Inter Milan, finance, politics / geo-politics, history, and reading.