Filippo De Angelis
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QUALIFICATIONS

2020 – 2024 **University of Oxford, The Queen's College, PhD in Mathematics**
Centre for Doctoral Training in the Mathematical Modelling of Random Systems
Research groups: mathematical and computational finance, numerical analysis

2019 – 2020, 2023 **Imperial College, MSc in Business Analytics (online, part-time)**

2018 – 2019 **University of Oxford, St Hugh's College, MSc in Mathematical and Computational Finance**
Distinction

2014 – 2017 **Ludwig Maximilian University of Munich, BSc in Business Mathematics**
Distinction, GPA: 1.1[1]

2014 **German School Rome, German and Italian High School Diploma**
GPA: 1.0, class 1st among ca. 50 students

PROFESSIONAL EXPERIENCE

2021 **Susquehanna International Group, Dublin (10 weeks)**
Quantitative Researcher, Summer Internship
- Developed, implemented and backtested a mid-frequency trading strategy for sales and earning release days, which went live post-internship
- Received a return offer

2020 – 2021 **K2K, Rome (10 months, part-time)**
Research Division, Software Developer, Reference: Marco De Paoli
- Implementations of Computer Vision tools in C++ and C#

2019 **Goldman Sachs, London (3 months)**
Securities, PIPG Sales, Equity Derivatives Structured Products, Internship, Reference: Tobias Stein
- Structuring and pricing of exotic equity derivative products

2018 **Deutsche Bank Corporate & Investment Bank, Frankfurt am Main (3 months)**
Global Markets, Global Equity Derivatives Trading, Internship, Reference: Tobias Hahn
- Assisted in managing an exotic portfolio, including Delta-Gamma hedging, secondary market making, and spreadsheet maintenance
- Designed a Python-based study with Bloomberg data, which optimizes the Gamma-hedging time for the trading desk

Feb – Apr '17, Apr '18 **KPMG, Munich (4 months)**
Financial Services, Risk Banking, Internship, Reference: Lora Todorova
- Gained competence in modelling processes and statistical testing in R by supporting a project on International Financial Reporting Standards 9 (IFRS9)

SELECTED RESEARCH PROJECTS

Ongoing **Thesis**, supervisors Prof. Mike Giles and Prof. Christoph Reisinger
Multilevel Function Approximation
- Introduces an efficient method to learn the function that maps the parameters of a financial model and of a financial product to the model price of the financial product
- Applications: pricing of exotic options, calibration, high-frequency trading of vanilla options
- Software (Work-in-progress)
- Topics: approximation theory, finite difference methods for PDEs, Monte Carlo methods for SDEs, feed-forward and random feature neural networks

Ongoing **Industry Project**, HSBC, Risk Division, supervisor Michal Grotowski
Efficient calculation of the Incremental Risk Charge (IRC) and Default Risk Charge (DRC)
- Proposed an importance-sampling based Monte Carlo estimator for IRC and DRC calculations
- Implemented a proof-of-concept demonstrating a reduction in calculation time by a factor of 4-5
- Topics: Importance sampling, automatic differentiation

2019 **Mini-Project,** Quantitative Risk Management, supervisor Dr. Jon Gregory
On the Credit Value Adjustment of interest rate swaps and its sensitivities

[1] German grading scale: 1.0 (best) to 5.0 (worst) interim steps included

TEACHING

2023	**Advanced Monte Carlo Methods,** *Tutor*, MSc in Mathematical and Computational Finance
2023	**Advanced Numerical Methods**, *Teaching Assistant*, MSc in Mathematical and Computational Finance
2022	**Mathematical Models of Financial Derivatives**, *Teaching Assistant*, BA in Mathematics
2021	**Financial Computing with C++**, *Tutor*, MSc in Mathematical and Computational Finance

SELECTED PRESENTATIONS

Upcoming	**Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing**, Waterloo (Canada)
Jun 2023	**Oxford-ETH Zurich Workshop on Mathematical & Computational Finance,** Oxford
Jun 2023	**Stochastic Control & Financial Engineering workshop,** Princeton, *Multilevel Function Approximation*
Jun 2023	**SIAM Conference on Financial Mathematics and Engineering (FM23)**, Philadelphia
Apr 2023	**Susquehanna International Group**, invited speaker
Oct 2022	**Berlin-Oxford Summer School**
Sep 2022	**London-Oxford-Warwick Mathematical Finance workshop**, Oxford-Man Institute of Quantitative Finance
Aug 2022	**Goldman Sachs,** invited speaker
Jun 2022	**International Conference on Computational Finance 2022**, Wuppertal *Multilevel Function Estimator*
Mar 2022	**HSBC**, invited speaker
May 2021	**CDT in Mathematics of Random Systems: Seminar** *Adjoint Sensitivity Methods (aka Automatic Differentiation)*

SCHOLARSHIPS, PRIZES & AWARDS

2020 – 2024	**Full Doctoral Scholarship**, EPRSC, University of Oxford
2022	**Gene Golub SIAM Summer School on Financial Analytics**, £1,500 for research collaboration
2022	**Best Youngster Presentation Award,** International Conference on Computational Finance 2022
2020	Flow Trader's **Code@Flow Hackathon**, 3rd place
Since 2018	**Deutsche Bank's student binding program** for excellent performance as intern
2017	**Award for best graduates in the academic year**, Ludwig Maximilian University of Munich
Since 2017	**KPMG highQ Programm**, student binding program for exceptional interns
2013	**Gold medal in the Italian kayak championship**; discipline: K4, 500m

ACADEMIC ACTIVITIES

Since 2022	Referee for the Risk Journals
2022 – 2023	Member of the Society for Industrial and Applied Mathematics (SIAM)

ADDITIONAL SKILLS

Languages**:**	**Italian** & **German** (bilingual), **English** (fluent, C1, IELTS 7.5/9.0), **Latin** (proficiency certificate)
Computing:	**Python** (Numpy, SciPy, PyTorch, Pandas): proficient, **C++/ Git/ MATLAB**: intermediate, **SQL/ C#/ R/ VBA:** basic
Coaching certifications:	**Expert Class, Roots & Wings (German)**, 2019 – 2022 **Master Class, Roots & Wings (German)**, 2023 – 2024
Interests:	**Kayak**: Falcon Club member **Poker**: student society **Scuba-Diving**: PADI Open Water Diver **Oxford Union**: debating society **Sant'Egidio Community**: teacher of Maths and Italian for Sinti and Roma children