

Chiheb Ben Hammouda

CURRICULUM VITAE (June 2026)

Contact Information

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1. Curriculum

1.1. Employment and academic positions

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| • Assistant Professor | 9/2023 – |
| Mathematical Institute, Utrecht University. | |
| • Postdoctoral Research Scientist | 2020 – 2023 |
| Chair of mathematics for uncertainty quantification, RWTH Aachen University, Germany | |
| • Teaching Assistant | 2016 – 2020 |
| King Abdullah University of Science and Technology (KAUST), KSA. | |
| • Research Assistant | 2013 – 2020 |
| King Abdullah University of Science and Technology (KAUST), KSA | |
| • Research fellow (intern) | 2012 |
| IDEA CONSULT, STUDI International Group, Tunisia | |

1.2. Education

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|---|-------------|
| • Ph.D. in Applied Mathematics , KAUST, KSA | 2016 – 2020 |
| Ph.D. Thesis: Hierarchical Approximation Methods for Option Pricing and Stochastic Reaction Networks. | |
| Thesis committee: Emmanuel Gobet, Diogo Gomes, Ajay Jasra, Ahmed Kebaier, and Raul Tempone. | |
| • M.Sc. in Applied Mathematics , KAUST, KSA | 2013 – 2015 |
| Master Thesis: Multilevel hybrid split-step implicit tau-leap for Stochastic Reaction Networks. | |
| Supervisor: Raul Tempone | |
| • Bachelor in Multidisciplinary Engineering , Ecole Polytechnique de Tunisie, Tunisia | 2010 – 2013 |
| Bachelor Thesis: Numerical Methods for Uncertainty Quantification in Option Pricing. | |

1.3. Research interests

- Numerical methods in quantitative finance: pricing financial derivatives and risk management.
- Monte Carlo, variance reduction, and dimension reduction techniques for forward and inverse problems in stochastic reaction networks with applications in biochemical systems and epidemiology.
- Optimal control and reinforcement learning for hybrid (including renewables) power systems management and trading in energy markets.
- Machine learning and data-driven methods for forecasting rare and extreme events.
- Hierarchical approximation methods for scientific computing and uncertainty quantification.

2. Publications

2.1. Refereed publications

- [1] Wu, X., Ben Hammouda, C. and Oosterlee, C.W.: SigMA: Path Signatures and Multi-head Attention for Learning Parameters in fBm-driven SDEs. *Neurocomputing*, vol. 25, no 11, p. 4593-4612. (2026). [\[Journal version\]](#) [\[Arxiv version\]](#).
- [2] Hermans, T.H., Ben Hammouda, C., Treu, S., Tiggeloven, T., Couasnon, A., Busecke, J.J. and van de Wal, R.S.: Computing Extreme Storm Surges in Europe Using Neural Networks. *Natural Hazards and Earth System Sciences*, vol. 25, no 11, p. 4593-4612. (2025). [\[Journal version\]](#).
- [3] Ben Hammouda, C., Rezvanova, E., von Schwerin, E. and Tempone, R.: Lagrangian Relaxation for Continuous-Time Optimal Control of Coupled Hydrothermal Power Systems Including Storage Capacity and a Cascade of Hydropower Systems with Time Delays. *Optimal Control Applications and Methods* (2024). [\[Journal version\]](#) [\[Arxiv version\]](#).
- [4] Bayer, C., Ben Hammouda, C., and Tempone, R: Multilevel Monte Carlo with Numerical Smoothing for Robust and Efficient Computation of Probabilities and Densities. *SIAM Journal on Scientific Computing* (2024). [\[Journal version\]](#) [\[Arxiv version\]](#).
- [5] Ben Hammouda, C., Ben Rached, N., Tempone, R., and Wiechert, S.: Automated Importance Sampling via Optimal Control for Stochastic Reaction Networks: A Markovian Projection-based Approach. *Journal of Computational and Applied Mathematics* (2024). [\[Journal version\]](#) [\[Arxiv version\]](#).
- [6] Bayer, C., Ben Hammouda, C., Papapantoleon, A., Samet, M. and Tempone, R.: Optimal Damping with Hierarchical Adaptive Quadrature for Efficient Fourier Pricing of Multi-Asset Options in Lévy Models. *Journal of Computational Finance*, 27(3) (2023), pp.43-86. [\[Journal version\]](#) [\[Arxiv version\]](#).
- [7] Ben Hammouda, C., Ben Rached, N., Tempone, R., and Wiechert, S: Learning-based importance sampling via stochastic optimal control for stochastic reaction networks. *Statistics and Computing* 33, no. 3 (2023): 58. [\[Journal version\]](#) [\[Arxiv version\]](#).
- [8] Bayer, C., Ben Hammouda, C., and Tempone, R: Numerical smoothing with hierarchical adaptive sparse grids and quasi-Monte Carlo methods for efficient option pricing. *Quantitative Finance* 23, no. 2 (2022): 209-227. [\[Journal version\]](#) [\[Arxiv version\]](#).
- [9] Bayer, C., Ben Hammouda, C., and Tempone, R: Hierarchical adaptive sparse grids and quasi-Monte Carlo for option pricing under the rough Bergomi model. *Quantitative Finance* 20, no. 9 (2020): 1457-1473. [\[Journal version\]](#) [\[Arxiv version\]](#).
- [10] Ben Hammouda, C., Ben Rached, N., and Tempone, R: Importance sampling for a robust and efficient multilevel Monte Carlo estimator for stochastic reaction networks. *Statistics and Computing* 30 (2020): 1665-1689. [\[Journal version\]](#) [\[Arxiv version\]](#).
- [11] Ben Hammouda, C., Moraes, A., and Tempone, R: Multilevel hybrid split-step implicit tau-leap. *Numerical Algorithms* 74 (2017): 527-560. [\[Journal version\]](#) [\[Arxiv version\]](#).

2.2. Preprints

- [P1] Ben Hammouda, Samet, M. and Tempone, R.: Data-Driven Stochastic Optimal Control for Intraday Electricity Trading by Renewable Producers. *arXiv preprint arXiv:2604.27700* (2026). [\[Arxiv version\]](#).
- [P2] Ben Hammouda, C. and Ngoc Nguyen, T.: Single-and Multi-Level Fourier-RQMC Methods for Multivariate Shortfall Risk. *arXiv preprint arXiv:2602.06424* (2026). [\[Arxiv version\]](#).
- [P3] Ben Hammouda, C., Chupin, M., Münker, S. and Tempone, R.: Filtered Markovian Projection: Dimensionality Reduction in Filtering for Stochastic Reaction Networks. *arXiv preprint arXiv:2502.07918* (2025). [\[Arxiv version\]](#).

- [P4] Bayer, C., Ben Hammouda, C., Papapantoleon, A., Samet, M. and Tempone, R.: Quasi-Monte Carlo for Efficient Fourier Pricing of Multi-Asset Options. *arXiv preprint arXiv:2403.02832* (2024). [\[Arxiv version\]](#).

2.3. Scientific Proceedings

- [S1] Ben Hammouda, C., Chen, Y., Denic, D., Jacobs, T., and Sanders, P.: Tackling Multicollinearity in Marketing Mix Models: A Bayesian Hierarchical Shrinkage Approach. *Report in the Scientific Proceedings of the Study Group Mathematics with Industry (SWI 2025)*. [\[Proceeding link\]](#).

2.4. Ph.D. thesis

- C. Ben Hammouda: *Hierarchical Approximation Methods for Option Pricing and Stochastic Reaction Networks* Ph.D. Thesis, King Abdullah University of Science and Technology, 2020. [\[Thesis link\]](#).

3. Teaching Experience

- Instructor, Utrecht University** 9/2023 - present
 - *Numerical Methods for Stochastic Differential Equations* (Spring 2026; Mastermath course, second edition).
 - *Seminar on Stochastic Optimal Control* (Spring 2026; new local master seminar, with Kees Oosterlee).
 - *Mathematical (Sustainable) Finance and Risk Management* (Fall 2025; new local master course; co-taught with Kees Oosterlee and Lech Grzelak)
 - *Numerical Methods for Stochastic Differential Equations* (Fall 2024; new Mastermath course).
 - *Programming for Mathematics* (Fall 2023, 2024, 2025; Bachelor course).
 - *Python and R* (Spring 2024, 2025, 2026; Bachelor course).
 - *Mini-Course: Introduction to Stochastic Modelling for Chemical and Biological Systems* taught at the Summer School on Applied Mathematics (August 2024).
- Program Co-Designer & Coordinator, Utrecht University** 2024–present
 - *Master's Track: Mathematical and Computational Finance* (Started in Fall 2025)
- Instructor, RWTH Aachen University** 2020 - 2023
 - *Numerical Methods for Stochastic Differential Equations with Connections to Machine Learning* (Winter 2020, 2021, 2022; Master course; with Raúl Tempone).
 - *Stochastic Numerics with Applications in Simulation and Data Science* (Summer 2021, 2022, 2023; Master course; with Raúl Tempone).
 - *Numerical methods for random partial differential equations: hierarchical approximation and machine learning approaches* (Summer 2022, 2023; Master course; with Raúl Tempone).
 - *Seminar: Data Science under Uncertainty* (Winter 2022, 2023).
 - *Seminar: Mathematics for Uncertainty Quantification* (Summer 2022, 2023).
 - *Seminar: Multilevel Monte Carlo* (Summer 2022, 2023).
- Instructor, Helmholtz School for Data Science in Life, Earth and Energy** June 2021
 - *Mini-course: The Bayesian framework for inverse problems* (Master and PhD level; with Nadhir Ben Rached).
- Teaching Assistant, KAUST** 2016 - 2020
 - Courses: *Numerical Linear Algebra, Multivariate Statistics, Numerical Methods for Stochastic Differential Equations, Stochastic Methods for Engineers*.

4. Grants

- Funding for the Workshop: *Mathematics and Machines: from Brown to Sustainable Finance (May 2026)* through the Lorentz Center.
- Funding for the doctoral project: *Data-Driven Continuous-Time Modelling and Efficient Numerical Methods for Optimal Strategies in (Renewable) Energy Markets* through the Helmholtz School for Data Science in Life, Earth and Energy (HDS-LEE) program. **Funding Period: 2023–2026.**
- Funding for the doctoral project: *Stochastic Optimal Control and Machine Learning Techniques for Effective Importance Sampling in Time-Continuous Markov Chains* through the Helmholtz School for Data Science in Life, Earth and Energy (HDS-LEE) program. **Funding Period: 2021–2024.**

5. Awards, Honors, and Fellowships

- Springer Nature Editors of Distinction Award 2025 – Author Service Award, Statistics and Computing, May 2025.
- [SIAG/FME Poster Prize](#), awarded at the SIAM Conference on Financial Mathematics and Engineering, University of Toronto, Canada, June 2019, for the poster “Hierarchical Adaptive Sparse Grids for Option Pricing under the Rough Bergomi Model.”
- KAUST Fellowship for Ph.D. Studies, King Abdullah University of Science and Technology, 2016–2020.

6. Supervising and Mentoring

6.1. PhD students

1. *Truong Nguyen (February 2025 - present)*, Utrecht University
Project: *Efficient Computational Methods for XVAs and Risk Measures*.
2. *Maksim Chupin (October 2024 - present)*, KAUST (jointly with Raúl Tempone)
Project: *Dimensionality Reduction in Filtering for Stochastic Reaction Networks*.
3. *Michael Samet (February 2024 - present)*, RWTH Aachen (jointly with Raúl Tempone)
Project: *Data-Driven Continuous-Time Modelling and Efficient Numerical Methods for Optimal Strategies in (Renewable) Energy Markets*.
4. *Eliza Rezvanova (2022 - Present)*, KAUST (jointly with Raúl Tempone)
Project: *Continuous-Time Optimal Control for the Management of Hybrid Power Systems*.
5. *Sophia Wiechert (2021 - 2024)*, RWTH Aachen University (jointly with Raúl Tempone).
Thesis: *Generic Importance Sampling via Stochastic Optimal Control and Dimensionality Reduction for Stochastic Reaction Networks*. [[Thesis link](#)].
Current Position: Postdoctoral Research Scientist, RWTH Aachen University.

6.2. Master students

1. *Jord van Eldik (Oct 2025 - June 2026)*, Utrecht University (jointly with Kees Oosterlee)
Thesis: *A Meyer Wavelet Fourier Method for Option Pricing*.
2. *Flore Steenberghe, Marta Amaro Calatayud, Emma Scheepstra, Ricardo Martinho Marques, Joppe Vermeulen (Nov 2025 - Jan 2026)*, Utrecht University
Orientation in Mathematical Research Project: *Machine Learning for Imbalanced Regression*.

3. *Flore Steenberghe, Teun Wezel, Arthur Valk, Marta Amaro Calatayud, Emma Scheepstra, Jasper Sickinger (September 2025 - November 2025)*, Utrecht University
Orientation in Mathematical Research Project: *Signature Volatility Models in Quantitative Finance*.
4. *Casper Bakker, Iddo Bruijn, Melle Versluis, Noah van de Weerd (Nov 2024 - Jan 2025)*, Utrecht University
Orientation in Mathematical Research Project: *Time Series Generation with Random Signatures*.
5. *Casper Bakker (Sep 2025)*, Utrecht University (second reader, supervisor Kees Oosterlee)
Thesis: *Anomaly detection in time-series using time-aware feature maps and analytic isolation*.
6. *Rick van Voorbergen (Sep 2025)*, Utrecht University (second reader, supervisor Kees Oosterlee)
Thesis: *Comparing Least Squares Monte Carlo with the Rolling Intrinsic strategy for Batteries Trading on the Intraday Electricity Market*.
7. *Jannes Vleming (July 2025)*, Utrecht University (second reader, supervisor Kees Oosterlee)
Thesis: *Solving Stochastic Differential Equations with the help of Ordinary Differential Equations*.
8. *Laura Robinson (Oct 2024)*, Utrecht University (jointly with Sioux Technologies company)
Thesis: *Bayesian Hierarchical Models for Forecasting Student Enrolment Counts*.
Current Position: Mathware Engineer, Sioux Technologies Company.
9. *Conrad Borm (Oct 2024)*, Utrecht University (jointly with CQM (Consultants in Quantitative Methods) company)
Thesis: *Surrogate Models: Analysis of their Current State, Applicability, Advantages and Limitations*.
Current Position: Junior SAP SCM Consultant, SOA PEOPLE .
10. *Maksim Chupin (July 2024)*, RWTH Aachen (jointly with Raúl Tempone and Sophia Wiechert).
Thesis: *Dimensionality Reduction in Filtering for Stochastic Reaction Networks*. [[Thesis link](#)].
Current Position: PhD candidate, KAUST.
11. *Jordy Lamers (Oct 2024)*, Utrecht University (second reader, supervisor Kees Oosterlee)
Thesis: *Evaluating Stochastic Correlation Processes and Copulas: Comparing Dependence Structures: Mean-Reverting vs. Constant Correlation Models*.
12. *Simon Hakvoort (Oct 2024)*, Utrecht University (second reader, supervisor Sjoerd Dirksen)
Thesis: *Improving Probabilistic Forecasting of Extreme Wind Speeds in the Netherlands*.
13. *Yeyang Hu (June 2024)*, Utrecht University (second reader, supervisor Ivan Kryven)
Thesis: *Algorithms for finding large independent sets on a (hyper)graph*.
14. *Michael Samet (July 2023)*, KAUST (jointly with Raúl Tempone).
Thesis: *Hierarchical Adaptive Quadrature and Quasi-Monte Carlo for Efficient Fourier pricing of Multi-Asset Options*. [[Thesis link](#)].
Current Position: PhD candidate, RWTH Aachen University.
15. *Yosr Samet (April 2023)*, RWTH Aachen (jointly with Raúl Tempone)
Thesis: *Numerical Study of Rough Volatility Models with Application to Option Pricing*. [[Thesis link](#)].
Current Position: Quantitative Investment Strategist, Allianz Global Investors.
16. *Sophia Wiechert (April 2021)*, RWTH Aachen (jointly with Raúl Tempone and Nadhir Ben Rached)
Thesis: *Optimal Control of Importance Sampling Parameters in Monte Carlo Estimators for Stochastic Reaction Networks*. [[Thesis link](#)].
Current Position: Postdoctoral Research Scientist, RWTH Aachen University.

6.3. Bachelor students

1. *Yoey Tolboom (February 2026 - June 2026)*, Bachelor thesis in Mathematics, Utrecht University
Thesis: *Neural network solutions to stochastic reaction networks*.
2. *Lucas Beernink (February 2026 - June 2026)*, Bachelor thesis in Mathematics, Utrecht University
Thesis: *Stochastic Approximation Methods for Multivariate Systemic Risk Measures*.
3. *Abderrahmene Ben Romdhane (February 2025 - September 2025)*, Bachelor thesis in Mathematics, KAUST (jointly with Michael Samet)
Thesis: *Hierarchical Fourier Pricing under Rough Volatility Models*.
4. *Kasper Marinus (February 2025 - June 2025)*, Double Bachelor Physics & Mathematics, Utrecht University (jointly with Rembert Duine)
Thesis: *Learning Parameter-Dependent Antiferromagnetic Dynamics with Machine Learning*.
5. *Thijs Perlee (February 2025 - June 2025)*, Double Bachelor Mathematics & Economics, Utrecht University (jointly with Maurizio Montone)
Thesis: *Predictable and profitable market inefficiencies in the online betting market during the 2022 football World Cup*.
6. *Luuk van Manen (February 2025 - June 2025)*, Bachelor thesis in Mathematics, Utrecht University
Thesis: *Mathematical and Numerical framework for fractional Brownian motion with applications to option pricing*.
7. *Tijmen Schipper (June 2024)*, Utrecht University
Thesis: *Enhanced Modeling and Control of Hybrid Power Systems: A Deep Reinforcement Learning Approach for Optimal Decision-Making* [[Thesis link](#)].
Current Position: Master's Student in Data Science, Utrecht University.
8. *Hamouda Baghdadi (September 2023)*, KAUST.
Thesis: *Numerical smoothing with multilevel (quasi) Monte Carlo (MLMC) for option pricing and Greeks computation* [[Thesis link](#)].
Current Position: Master's Student in Mathematics For Finance And Data, École des Ponts Paris-Tech.
9. *Arij Hafi (September 2023)*, KAUST.
Thesis: *Smooth simulation scheme for stochastic volatility models*. [[Thesis link](#)].
Current Position: M2 Probabilités et Finance, École Polytechnique, France
10. *Nader Chamam (September 2022)*, RWTH Aachen.
Thesis: *Efficient Pricing of American Options Using Machine Learning and Randomized Stopping Techniques*. [[Thesis link](#)].
Current Position: Master's Student in Financial Engineering, HEC Montréal
11. *Michael Samet (September 2021)* RWTH Aachen.
Thesis: *Fourier Techniques Combined with Hierarchical Deterministic Quadrature Methods for Efficient Pricing of High-Dimensional Options*. [[Thesis link](#)].
Current Position: PhD candidate, RWTH Aachen University.
12. *Yosr Samet (September 2020)* RWTH Aachen.
Thesis: *Statistical and Numerical Analysis of Rough Volatility Pricing Models*. [[Thesis link](#)].
Current Position: Quantitative Investment Strategist, Allianz Global Investors.
13. *Nihel Seghaier (June 2020)* RWTH Aachen.
Thesis: *Efficient Option Pricing Using Fourier Techniques*. [[Thesis link](#)].
Current Position: Senior Associate at Deloitte, Canada.

7. Talks at Conferences & Seminars

1. *June 2026*: “Single- and Multi-Level Fourier-RQMC Methods for Multivariate Shortfall Risk Measures”, 17th International Conference on Monte Carlo and Quasi-Monte Carlo Methods (**Invited Talk**, Edinburgh, UK). [\[Link to the talk\]](#).
2. *October 2025*: “Data-Driven Stochastic Optimal Control for Trading of Renewables on Intraday Energy Markets”, Stochastics in Mathematical Finance and Physics Conference (**Invited Talk**, Hammamet, Tunisia). [\[Link to the talk\]](#).
3. *June 2025*: “Filtered Markovian Projection: Dimensionality Reduction in Filtering for Stochastic Reaction Networks”, 2025 Annual NDNS+ UTWENTE WORKSHOP (**Invited Talk**, University of Twente, the Netherlands). [\[Link to the talk\]](#).
4. *June 2025*: “Quasi-Monte Carlo for Efficient Fourier Pricing of Multi-Asset Options”, Premia Annual Meeting 2025. (**Invited Talk**, Centre Inria de Paris, France).
5. *May 2025*: “Efficient Filtering and Importance Sampling via Markovian Projection in Stochastic Reaction Networks”, Workshop: Stochastic Numerics and Statistical Learning: Theory and Applications (**Invited Talk**, KAUST, KSA). [\[Link to the talk\]](#).
6. *April 2025*: “Efficient Filtering and Importance Sampling via Markovian Projection in Stochastic Reaction Networks”, Séminaire de Probabilités, Laboratoire de Mathématiques et Modélisation (**Invited Talk**, Evry, France).
7. *January 2025*: “Empowering Fourier-based Pricing Methods for Efficient Valuation of High-Dimensional Derivatives”, 22nd Winter school on Mathematical Finance (**Invited Talk**, Soesterberg, the Netherlands). [\[Link to the talk\]](#).
8. *September 2024*: “Efficient Filtering and Importance Sampling via Markovian Projection in Stochastic Reaction Networks”, Casa Colloquium (**Invited Talk**, Eindhoven University of Technology, the Netherlands). [\[Link to the talk\]](#).
9. *August 2024*: “Dimensionality Reduction via Markovian Projection in Filtering for Stochastic Reaction Networks: Bridging Accuracy and Efficiency”, 16th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing (**Internal mini-symposium Talk**, University of Waterloo, Canada).
10. *May 2024*: “Empowering Fourier-Based Methods for Computing Expectations and Pricing Multi-Asset Options”, Workshop: Stochastic Numerics and Statistical Learning: Theory and Applications (**Invited Talk**, KAUST, KSA). [\[Link to the talk\]](#).
11. *April 2024*: “Efficient Fourier Pricing of Multi-Asset Options: Quasi-Monte Carlo & Domain Transformation Approach”, International Conference on Computational Finance (**Internal mini-symposium Talk**, Amsterdam, the Netherlands). [\[Link to the talk\]](#).
12. *January 2024*: “Generic Importance Sampling via Optimal Control for Stochastic Reaction Networks”, Mathematical Institute Seminar (**Internal Talk**, Utrecht, the Netherlands). [\[Link to the talk\]](#).
13. *December 2023*: “Empowering Fourier-Based Methods for Efficient Valuation of High-Dimensional Derivatives”, Finance Research Day at TU Delft (**Invited Talk**, Delft, the Netherlands). [\[Link to the talk\]](#).
14. *November 2023*: “Generic Importance Sampling via Optimal Control for Stochastic Reaction Networks”, Joint Leiden/VU/Delft Seminar (**Invited Talk**, Delft, the Netherlands). [\[Link to the talk\]](#).
15. *June 2023*: “MLMC Combined with Numerical Smoothing for Efficient Probabilities Computation, Density Estimation, and Option Pricing”, 14th International Conference on Monte Carlo Methods and Applications (**Internal mini-symposium Talk**, Paris, France). [\[Link to the talk\]](#).

16. *June 2023*: “Optimal Damping with Adaptive Quadrature for Efficient Fourier Pricing of Multi-Asset Options”, SIAM Conference on Financial Mathematics (FM23) (**Contributed Talk**, Philadelphia, USA). [\[Link to the talk\]](#).
17. *May 2023*: “Analysis of Numerical Smoothing with Hierarchical Approximations: Applications in Probabilities/Densities Computation and Option Pricing”, Workshop: Numerical Analysis of Stochastic Partial Differential Equations (NASPDE) (**Invited Talk**, Eindhoven, the Netherlands). [\[Link to the talk\]](#).
18. *May 2023*: “Automated Importance Sampling via Optimal Control for Stochastic Reaction Networks: Learning and Markovian Projection-based Approaches”, Workshop: Stochastic Numerics and Statistical Learning: Theory and Applications (**Invited Talk**, KAUST, KSA). [\[Link to the talk\]](#).
19. *October 2022*: “Smoothing Techniques and Hierarchical Approximations for Efficient Option Pricing”, Mathematical Finance Seminar (**Invited Talk**, Humboldt-Universität zu Berlin, Germany). [\[Link to the talk\]](#).
20. *July 2022*: “Quasi-Monte Carlo & Multilevel Monte Carlo Methods Combined with Numerical Smoothing for Efficient Option Pricing and Density Estimation”, 15th International Conference on Monte Carlo and Quasi-Monte Carlo Methods (**Contributed Talk**, Linz, Austria). [\[Link to the talk\]](#).
21. *June 2022*: “Numerical Smoothing and Hierarchical Approximations for Efficient Option Pricing”, International Conference on Computational Finance (ICCF2022) (**Contributed Talk**, Wuppertal, Germany). [\[Link to the talk\]](#).
22. *May 2022*: “Numerical Smoothing and Hierarchical Approximations for Efficient Option Pricing and Density Estimation”, Workshop: Stochastic Numerics and Statistical Learning: Theory and Applications (**Invited Talk**, KAUST, KSA). [\[Link to the talk\]](#).
23. SIAM Conference on Financial Mathematics (FM21), online conference, 2021. (**Invited Talk**).
24. 14th International Conference on Monte Carlo and quasi-Monte Carlo Methods, University of Oxford, UK, 2020. (**Contributed Talk**). [\[Link to the talk\]](#).
25. Math4UQ Seminar, RWTH Aachen University, Germany, 2020. (**Invited Talk**).
26. International Conference on Computational Finance 2019 (ICCF2019), Coruña, Spain, 2019. (**Contributed Talk**).
27. 12th International Conference on Monte Carlo and quasi-Monte Carlo Methods, Stanford University, USA, 2016. (**Contributed Talk**).

8. Academic Service and Professional Activities

8.1. Conference, workshop, and minisymposium organization

1. **Co-organizer:** *Mini-symposium: Stochastic Control and Learning Methods for decision-making under uncertainty with Applications to Energy, Climate, and Finance*, [International Conference on Computational Finance 2026](#), Oxford, UK, September 2026.
2. **Co-organizer:** *Mini-symposium: Recent advances in transform (Fourier/Laplace) methods for computational finance and risk management*, [International Conference on Computational Finance 2026](#), Oxford, UK, September 2026.
3. **Co-organizer:** *Mini-symposium: Monte Carlo Methods for Stochastic Reaction Networks*, [17th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing \(MCQMC 2026\)](#), Edinburgh, UK, June 2026.
4. **Co-organizer:** *Mini-symposium: Modeling, Prediction, and Trading in Energy Markets*, [the XIII Bachelier World Congress of the Bachelier Finance Society](#), Bologna, Italy, June 2026.

5. **Co-organizer:** *Mini-symposium: Recent advances in transform (Fourier/Laplace) methods for computational finance and risk management*, [the XIII Bachelier World Congress of the Bachelier Finance Society](#), Bologna, Italy, June 2026.
6. **Co-organizer (May 2026):** *Lorentz workshop: Mathematics and Machines: Navigating the Transition from Brown to Sustainable Finance*, Leiden, the Netherlands.
7. **Co-organizer (March 2026):** *Mathematical Finance Research Half Day*, Utrecht University, the Netherlands.
8. **Co-organizer (July 2025):** *Mini-symposium: Modeling, Prediction, and Trading in Energy Markets*, [2025 SIAM Financial Mathematics and Engineering](#), Miami, US.
9. **Co-organizer (July 2025):** *Mini-symposium: Forward and Inverse Problems for Stochastic Reaction Networks*, The 15th International Conference on Monte Carlo Methods and Applications (MCM), the Illinois Institute of Technology, Chicago, US.
10. **Co-organizer:** *Study Group Mathematics with Industry (SWI 2025)*, Utrecht University, the Netherlands, January 2025.
11. **Co-organizer:** *International Conference on Computational Finance 2024 (ICCF24)*, Amsterdam, the Netherlands, April 2024.
12. **Co-organizer:** *Mini-symposium: Recent Advances in QMC Methods for Computational Finance and Financial Risk Management*, [the 16th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing](#), Waterloo, Canada, August 2024.
13. **Co-organizer:** *Mini-symposium: Recent advances in Monte Carlo methods for forward and inverse problems for stochastic reaction networks*, [the 16th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing](#), Waterloo, Canada, August 2024.
14. **Organizer:** *Mini-symposium: Recent advances in MLMC methods for computational finance and financial risk management*, [International Conference on Computational Finance 2024 \(ICCF24\)](#), Amsterdam, the Netherlands, April 2024.
15. **Co-organizer:** *Mini-symposium: Recent advances in transform (Fourier/Laplace) methods for computational finance and insurance*, [International Conference on Computational Finance 2024 \(ICCF24\)](#), Amsterdam, the Netherlands, April 2024.
16. **Co-organizer:** *Uncertainty Quantification Hybrid Seminar*, RWTH Aachen University, 2022 - 2023.
17. **Co-organizer:** *Mini-symposium: Recent advances in Fourier transform methods for computational finance and Insurance*, [SIAM Conference on Financial Mathematics \(FM23\)](#), Philadelphia, USA, 2023.
18. **Co-organizer:** *Mini-symposium: MLMC techniques for discontinuous functionals*, [14th International Conference on Monte Carlo Methods and Applications](#), Paris, France, 2023.
19. **Co-organizer:** *Mini-symposium: Recent advances in Monte Carlo Methods for forward and inverse problems for stochastic reaction networks, MLMC techniques for discontinuous functionals*, [14th International Conference on Monte Carlo Methods and Applications](#), Paris, France, 2023.
20. **Co-organizer:** *Mini-symposium: Monte Carlo Methods and Variance Reduction Techniques for Stochastic Reaction Networks, MLMC techniques for discontinuous functionals*, [The 15th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing](#), Linz, Austria, 2022.
21. **Co-organizer:** *Workshop: Stochastic Numerics and Statistical Learning: Theory and Applications*, KAUST, KSA, 2022.
22. **Co-organizer:** *Mini-symposium: Variance Reduction Techniques for Computational Finance*, The 13th International Conference on Monte Carlo Methods and Applications, Mannheim University, Germany, 2021.

23. **Co-organizer:** Mini-symposium: *Hierarchical Methods for Variance Reduction*. The 14th International Conference on Monte Carlo and Quasi-Monte Carlo Methods in Scientific Computing, University of Oxford, UK, 2020.

8.2. Editorial and reviewing activities

- **Associate editor** for the *Statistics and Computing* Journal.
- **Referee** for *SIAM Journal on Numerical Analysis*, *SIAM Journal Financial Mathematics*, *Quantitative Finance*, *Finance and Stochastics*, *Statistics and Computing*, *Computational and Applied Mathematics*, *Mathematics and computers in simulation*, *International journal of computer mathematics*, *Decisions in Economics and Finance*, *Financial Innovation*, and *Risk Journals*.

8.3. Grant evaluation and advisory service

- Member, NWO proposal evaluation committee, Dutch Research Council (NWO), 2025.

8.4. Community and outreach service

- Math4NL Ambassador for Utrecht University, 2024–present.

8.5. PhD thesis evaluation committees

- *November 2024*: Thomas Van Der Zwaard (Utrecht University)
Thesis: *Enhanced Modelling of Valuation Adjustments for Comprehensive Financial Risk Management*
- *August 2024*: Sophia Wiechert (RWTH Aachen University)
Thesis: *Generic Importance Sampling via Stochastic Optimal Control and Dimensionality Reduction for Stochastic Reaction Networks*.

8.6. Professional membership

- Bachelier Finance Society.
- Society for Industrial and Applied Mathematics (SIAM).
- International Association of Applied Mathematics and Mechanics (GAMM).