Fayçal Drissi

Post-Doctoral Researcher · University of Oxford · Financial Technology and Machine Learning

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ACADEMIC BACKGROUND

2024-2027 **University of Oxford,** Postodoctoral Research. Supervised by Prof. Álvaro Cartea.

2020-2023 **Université Paris 1 Panthéon-Sorbonne,** PhD in Applied Mathematics. Supervised by Prof. Olivier Guéant.

2013-2014 **Université Paris Dauphine – PSL,** Master's in Finance.

2011-2012 **IAE Graduate School of Management,** Master's in Quantitative Finance. Distinction.

2009-2012 **ENS Informatique et Mathématiques Appliquées – Grenoble,**
Diplôme d'ingénieur in Applied Mathematics and Computer Science. Honours / Merit-based scholarship.

2008-2009 **Classes Préparatoires,** Advanced Courses in Mathematics and Physics. Distinction.

RESEARCH

Publications

2024. Cartea, Á., Drissi, F. & Monga, M. Decentralised Finance and Automated Market Making: Predictable Loss and Optimal Liquidity Provision. **SIAM Journal on Financial Mathematics** .

2023. Cartea, Á., Drissi, F. & Monga, M. Decentralised Finance and Automated Market Making: Predictable Losses of Liquidity Provision in Constant Function and Concentrated Liquidity Markets. **Applied Mathematical Finance**.

2022. Bergault, P., Drissi, F. & Guéant, O. Multi-asset Optimal Execution and Statistical Arbitrage Strategies under Ornstein–Uhlenbeck Dynamics. **SIAM Journal on Financial Mathematics**.

2022. Drissi, F. Solvability of Differential Riccati Equations and Applications to Algorithmic Trading with Signals. **Applied Mathematical Finance**.

Submitted papers

2023. Cartea, Á., Drissi, F. & Monga, M. Decentralised Finance and Automated Market Making: Execution and Speculation. 2^{nd} **round Journal of Economic Dynamics and Control**.

2023. Cartea, Á., Drissi, F. & Osselin, P. Bandits for Algorithmic Trading with Signals. 1^{st} **round SIAM Journal Financial Mathematics**.

Working papers

2024. Capponi A., Cartea, Á., & Drissi, F. Price Formation in Memory Pools.

2024. Cartea, Á., & Drissi, F. Equilibrium Concentrated Liquidity in Automated Market Makers.

2024. Cartea, Á., Sanchez-Bettancourt, L., & Drissi, F. Market impact and price formation in over-the-counter markets.

2023. Cartea, Á., Drissi, F., Sánchez-Betancourt, L., Siska, & D., Szpruch L. Automated Market Makers Designs Beyond Constant Functions.

Conference papers

2024. Waldon, H., Drissi F., Limmer. Y, Berdica U., Foerster JN., Cartea Á. DARE: The Deep Adaptive Regulator for Control of Uncertain Continuous-Time Systems. **ICML 2024**: Foundations of Reinforcement Learning and Control.

2023. Cartea, Á., Drissi, F. & Monga, M. Execution and Statistical Arbitrage with Signals in Multiple Automated Market Makers. **IEEE** ICDCS 2023 proceedings.

Thesis

2023. Drissi, F. Models of market liquidity: Applications to traditional markets and automated market makers.

TEACHING

Details: www.faycaldrissi.com/teaching/

Graduate teaching – Lecturer

2025 **University of Oxford, Saïd Business School**, MSc Financial Economics.
Lecturer, Continuous-time Finance, 24 hours.

2024 **University of Oxford, Maths Institute**, MSc Mathematical and Computational Finance.
Lecturer, Microstructure and Algorithmic Trading, 8 hours

2022 **Université Paris 1 Panthéon-Sorbonne**, Msc modélisation aléatoire finance & data science.
Lecturer, Computer C++ and Applications to Finance, 21 hours

Msc Supervision

2024 **University of Oxford, Maths Institute**, MSc Mathematical and Computational Finance
Msc thesis supervisor, 4 students, 20 hours. Topics: decentralised exchange design, optimal liquidity supply in FinTech, deep learning for algorithmic trading.

2023 **University of Oxford, Department of Statistics**, Master in Statistical Science.
Msc thesis supervisor, 2 students, 10 hours. Topics: liquidity supply blockchain data analysis, lending & borrowing markets.

2023 **University of Oxford, Maths Institute**, MSc Mathematical and Computational Finance.
Msc thesis supervisor, 2 students, 10 hours. Topics: optimal routing and market impact in decentralised exchanges.

2021 **ENSAE ParisTech**, Cursus Ecole Ingénieur.
Msc thesis supervisor, 3 students, 6 hours. Topics: Almgren-Chriss model for portfolios.

SCHOLARSHIPS & GRANTS

Grants and Awards

2023 **Best PhD Thesis prize**, EURO Working Group for Commodities and Financial Modelling.

2023 **PhD Prize in Maths and Data Science**, G-Research.

2022 **Chaire Fintech at University Paris Dauphine - PSL**, Research Grant.

Scholarships

2022-2023 **PhD Bursary**, Oxford-Man Institute of Quantitative Finance.

2020-2022 **PhD Bursary**, New-York Life Insurance.

2009-2012 **Excellence Scholarship**, Moroccan Ministry of Higher Education, Scientific Research and Innovation.

ACADEMIC ACTIVITIES

Referee Mathematical Finance, SIAM Journal on Financial Mathematics, Applied Mathematical Finance, International Journal of Theoretical and Applied Finance, Digital Finance, Quantitative Finance, Ledger, Frontiers of Mathematical Finance.

Curator **Quantitative Finance Research Newsletter (OMIReNew)** Oxford-Man Institute.

INDUSTRY EXPERIENCE

2017-2020 **New-York Life Investment – Candriam,** Quantitative trading, Systematic & Global Macro.

2015-2017 **AXA Investment Managers,** Quantitative research, rates derivatives & Systematic investment.

CONFERENCES / SEMINARS

Invited

2024. Advances in Financial Technology. Seminar on *Finance & Stochastics seminar, Imperial College London*.

2024. Advances in Financial Technology. *Stochastic Finance @Warwick seminar, Warwick University*.

2024. AMMs beyond constant functions. *Frontiers in DeFi. Complexity Science Hub, Vienna.*

2024. Bonding curves of AMMs. *Conference on Microstructure, Quantitative Trading, High Frequency, and Large Data. Stevanovich Center for Financial Mathematics, University of Chicago.*

2024. Equilibrium liquidity in AMMs. *Seminar on DeFi, Harvard University*.

2024. Price impact in Quote Driven Markets. *Seminar on Microstructure, Imperial College London*.

2024. OTC Market Making with Competition and Impact. *University of California, Los Angeles*.

2023. AMM design and predictable losses. *Mathematical Institute Seminar, University of Oxford*.

2023. Liquidity provision in AMMs. *QuantMinds International Deep Dive & Digital Assets*.

2023. Optimal liquidity provision in AMMs. *BlockSem seminar, Ecole Polytechnique*.

2023. Bandits for algorithmic trading. *Machine Learning Conference, University of Oxford*.

2023. The microstructure of AMMs. *Seminar for master students, University of Edinburgh*.

2023. Optimal Liquidity Provision in AMMs. *KCL Financial Mathematics seminar, King's College London*.

Contributed

2024. Price formation in mempools. *CBER Cryptoeconomy Conf. Center for Digital Fin. & Technologies, Columbia University*.

2024. Mathematics of DeFi. *Workshop on Mathematical Insights of Markets, Control, and Learning. Ecole Polytechnique*.

2024. Advances in automated market making. *Oxford-Princeton Workshop XIII, Princeton University*.

2024. Equilibrium liquidity in Decentralised Markets. *Bachelier Finance Society – World Congress*.

2023. Predictable Losses of Liquidity Provision in AMMs. *EURO Working Group, Commodities and Financial Modelling, Rome*.

2023. AMMs beyond constant functions. *WBS Gillmore Centre Conference: DeFi & Digital Currencies, Warwick University*.

2023. Bandits for algorithmic trading. *EURO Working Group for Commodities and Financial Modelling, Abu-Dhabi*.

2023. Bandits in algorithmic trading. *Fields-CFI Conf. on Advances in Math Finance and Insurance, University of Toronto*.

2023. Optimal liquidity Provision in AMMs. *SIAM Conference on Financial Mathematics, Philadelphia*.

2023. Optimal liquidity provision and execution in AMMs. *Oxford-ETH Seminar, University of Oxford*.

2023. Optimal liquidity provision and execution in AMMs. *Oxford-ETH Seminar, University of Oxford*.

Organized

2025. Oxford-Harvard Conference on Decentralised Finance and Market Microstructure.

2023-Present. OMI Finance Seminar monthly series, OMI Students Seminar, and OMI Crossroads Seminar.

2023-2024. DeFox weekly seminar series on decentralised finance, University of Oxford.

2023. Financial Technology Conference, University of Oxford.

2023. Blockchain@X-OMI Workshop on Blockchain and Decentralized Finance, Ecole Polytechnique/University of Oxford.

OTHERS

Programming : Python, C++, C#, C, Matlab, R, Java, SQL, Bquant (Bloomberg).

Languages : English, French, Arabic, Japanese.