Curriculum Vitae of Min DAI

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Current Employment

Head and Hung Hing Ying Chair Professor of International Economics and Finance
Department of Economics and Finance, College of Business, City University of Hong Kong

Education

Ph.D. (2000) Fudan U; M.Phil. (1998) PolyU; B.Sc. (1992) & M.Sc. (1997) Soochow U

Past Academic Experiences

- Chair Professor, Department of Applied Mathematics (Oct 2021-Jul 2026) and School of Accounting and Finance (Dec 2022-Jul 2026), The Hong Kong Polytechnic University (PolyU)
- Visitor, Department of Industrial Engineering and Operations Research, Columbia University & Department of Finance and Risk Engineering, Tandon School of Engineering, New York University (Sep 2025–Dec 2025)
- Professor (Jul 2013–Oct 2022), Associate Professor (Jan 2010–Jun 2013), Assistant Professor (Jul 2004–Dec 2009), Department of Mathematics, NUS
- Visitor, Olin Business School, Washington University in St. Louis (Jun 2010–Jun 2011, sabbatical leave)
- Associate Professor (Sep 2003–Jun 2004) and Lecturer (Jun 2002–Aug 2003), Department of Financial Mathematics, Peking University
- Postdoctoral Fellow, Institute of Mathematics, Peking University (Oct 2000–May 2002)
- Visitor, Department of Mathematics, HKUST (May–Sep 2000, Jan–Feb 2001, Jun–Dec 2001, Jul–Nov 2002, Jun–Aug 2003)

Past Administrative Experiences

- Member, Departmental Management Committee, Learning and Teaching Committee, Research Committee, and Postgraduate Programme Committee, Dept of Applied Mathematics, PolyU (Jun 2022-Jul 2026)
- Director, Research Centre for Quantitative Finance, PolyU (Jun 2022–Jul 2026)
- Founding Program Director, Master of Science in Quantitative Finance and FinTech & Dual Master Degree Program with NYU in Financial Engineering and FinTech, PolyU (Sep 2023–Jul 2024)
- Director, Centre for Finance and Financial Risk Management, Chongqing Research Institute, NUS (Mar 2020–Sep 2021)
- Program Director, NUS-SJTU Master of Science in Quantitative Finance, NUS (Jul 2018–Jul 2021)
- Deputy Director & Director of Suzhou Office, Risk Management Institute, NUS (Nov 2014–Nov 2018)

- Director, Centre for Quantitative Finance, NUS (Jul 2014–Jul 2021)
- Program Director, Master of Science in Quantitative Finance, NUS (Jul 2012–Jul 2021)
- Acting Director, Center for Quantitative Finance, NUS (Jun 2012–May 2013)

Research Interests

Asset Allocation with Market Imperfection, Derivatives Pricing, Corporate Finance, FinTech

Professional Service

- Council Member, Bachelier Finance Society (Jan 2026-Dec 2027)
- Prizes Committee Member, Bachelier Finance Society (Dec 2025-Dec 2027)
- Chair, INFORMS Finance Section (Jan 2025-Dec 2027)
- Board Member, INFORMS Finance Section (Jan 2022-Dec 2024)
- Associate Editor: Operations Research (Jan 2024-present), Finance and Stochastics (Jan 2021-present), Frontiers of Mathematical Finance (Dec 2020-present), Mathematics and Financial Economics (Jan 2017-present), SIAM Journal on Financial Mathematics (Jan 2016-present), Journal of Economic Dynamics and Control (Jan 2010-present)
- Co-Editor: Digital Finance (Dec 2018-present)

Recognitions and Selected External Research Grants

- RGC Senior Research Fellow, 2026/27
- Plenary Speaker, the 12th World Congress of the Bachelier Finance Society, Rio de Janeiro, Brazil, Jul 8-12, 2024
- 2015 Outstanding Scientist, Faculty of Science, NUS
- 2011 TCW Best Paper Award (US$2,500), "Optimal Consumption and Investment with Asymmetric Long-Term/Short-Term Capital Gains Taxes" (joint with Hong Liu and Yifei Zhong)
- PI, "Continuous-time reinforcement learning for singular control in portfolio optimization" (15203625), General Research Fund 2025/26 in the field of Operations Research, HKRGC. Amount: HK$848,043
- PI, "A principal-agent approach to pricing variable annuities with guaranteed minimum benefits" (15212324), General Research Fund 2024/25 in the field of Operations Research, HKRGC. Amount: HK$797,537
- PI, "Closed-loop equilibria in option exercise games with singular controls" (15217123), General Research Fund 2023/24 in the field of Operations Research, HKRGC. Amount: HK$1,001,861
- PI, "Continuous-time equilibrium mean-variance strategy with transaction costs" (15213422), General Research Fund 2022/23 in the field of Operations Research, HKRGC. Amount: HK$778,528
- PI, "Portfolio selection with reinforcement learning" (12071333). Source: National Natural Science Fund of China. Duration: 4 years from Jan 2021. Amount: RMB528,000

- PI, “Non-concave portfolio optimization with transaction costs and capital gains tax”(R-146-000-306-114). Source: Singapore MOE Academic Research Fund. Duration: 3 years from Mar 2020. Amount: S$105,542
- PI, “Global risk management: Modeling, mathematical, and statistical issues”(R-146-000-160-646). Source: Singapore MOE Academic Research Fund. Duration: 3 years from Oct 2017. Amount: S$530,600

Organizing/Scientific Committee of Workshop/Conference/Summer School since 2022

- Chair of Scientific Committee, The Second INFORMS Conference in Financial Engineering and FinTech (6-7 Nov 2026, in Stevens Instute of Technology, NJ)
- Member of Scientific Committee, The 13th World Congress of the Bachelier Finance Society (June 29–July 3, 2026, in Bologna)
- Chair of Organizing Committee, Workshop on Stochastic Control, Financial Technology, and Machine Learning (11-14 Dec 2025, Hong Kong)
- Member of Organizing Committee, 2025 SIAM Conference on Financial Mathematics and Engineering (15-18 Jul 2025, Miami, U.S.)
- Co-chair of Organizing Committee, The 9th Asian Quantitative Finance Conference (26-28 Apr 2025, Shenzhen)
- Co-chair of Organizing Committee, The 2nd ETH-HK-Imperial Joint Workshop on Quantitative Finance (22-25 Apr 2025, Hong Kong)
- Chair of Organizing Committee, The First INFORMS Conference in Financial Engineering and FinTech (19-21 Aug 2024, Hong Kong)
- Chair of Organizing Committee, Recent Advances on Quantitative Finance (27-30 Aug 2023, Hong Kong)

Organizing/Scientific Committee of Workshop/Conference/Summer School before 2022

- IMS Program on Financial Mathematics (2 Nov-23 Dec 2009 Singapore)
- NUS-Stanford Workshop on Risk and Regulation (17-18 Dec 2012 Singapore)
- The First Asian Quantitative Finance Conference (9-11 Jan 2013 Singapore)
- IMS Program on Nonlinear Expectation and Risk Measure (3 Jun-12 Jul 2013 Singapore)
- The 2013 IMS-FPS Workshop (19-21 Jun 2013 Singapore)
- The 1st and 2nd NUS-UTokyo Workshops on Quantitative Finance (26-27 Sep 2013 Singapore, 25-26 Sep 2014 Tokyo)
- The 2nd and 3rd NUS Workshops on Risk and Regulation (9-10 Jan 2014 Singapore, 8-9 Jan 2015 Singapore)
- The 2nd NUS-Stanford Workshop in Quantitative Finance: Statistical Issues (16 May 2014 Singapore)

- NUS-UParis Diderot Workshop on Quantitative Finance (4-5 Feb 2015 Singapore)
- Paris-Southeast Asia Conference in Mathematical Finance (7-11 Feb 2015 Cambodia)
- Risk Management and Quantitative Finance Forum (15-16 May 2015 Suzhou)
- 2015 Berlin-Princeton-Singapore Workshop on Quantitative Finance (29 Jun-1 Jul 2015 Singapore)
- 2015 Graduate Summer School on Quantitative Finance (3-11 Jul 2015 Suzhou)
- Singapore-Suzhou Workshop on Quantitative Finance (12-13 Jul 2015 Suzhou)
- The 2nd NUS-UParis Diderot Workshop on Quantitative Finance (14-15 Sep 2015 Paris)
- The 4th NUS Workshop on Risk & Regulation (7-8 Jan 2016 Singapore)
- The 1st Risk Measures, XVA Analysis, Cost of Capital & Central Counterparties (18-19 Apr 2016 Singapore)
- 2016 Berlin-Princeton-Singapore Workshop on Quantitative Finance (12-13 Jul 2016 Princeton)
- Models and Numerical Methods for Financial Risk Management (6-7 Oct 2016 Paris)
- The 2nd Risk Measures, XVA Analysis, Cost of Capital & Central Counterparties (27-28 Oct 2016 Shanghai)
- The 5th NUS Workshop on Risk & Regulation (5-6 Jan 2017 Singapore)
- The 4th NUS-USPC Workshop on New Challenges in Financial Risk Control (11-12 Apr 2017 Singapore)
- The 3rd Berlin-Princeton-Singapore Workshop on Quantitative Finance (19-22 Apr 2017 Berlin)
- Workshop on Stochastic Modelling in Finance (28-31 May 2017 Cambodia)
- The 2nd Paris-Asia Conference in Quantitative Finance (23-24 May and 26-27 May 2017 Suzhou)
- 2017 Graduate Summer School on Quantitative Finance (16-23 Jul 2017 Suzhou)
- The 1st Singapore-Munich Conference on Innovations in Insurance, Risk, and Asset Management & 6th NUS Workshop on Risk and Regulation (19-20 Sep 2017 Singapore)
- The 5th NUS-USPC Workshop on Machine Learning and FinTech (29-30 Nov 2017 Paris)
- The 6th NUS-USPC Workshop on Machine Learning and FinTech (18-19 Apr 2018 Singapore)
- The 4th Young Researchers Meeting on BSDEs, Nonlinear Expectations and Mathematical Finance (23-27 Apr 2018 Shanghai)
- The 3rd PKU-NUS Annual International Conference on Quantitative Finance and Economics (12-13 May 2018 Beijing)
- The 6th AQFC Conference (17-19 Nov 2018 Guangzhou)
- Data Science and Finance (26 Feb-2 Mar 2019 Cambodia)
- 2019 Berlin-Princeton-Singapore Workshop on Quantitative Finance (18-20 Mar 2019 Singapore)

- HUB-NUS Workshop on Fintech (21 Mar 2019 Singapore)
- Recent Developments in Mean-Field Game, Machine Learning and Quantitative Finance (21-24 May 2019 Vietnam)
- 2019 International Conference on Fintech (10-11 Jun 2019 Shanghai)
- The 7th Asian Quantitative Finance Conference (AQFC) (2-5 Jul 2019 Vietnam)
- IMS Program on Quantitative Finance Workshop 1: Stochastic Control in Finance (22-26 Jul 2019 Singapore)
- IMS Program on Quantitative Finance Workshop 2: Fintech and Machine Learning (5-8 Aug 2019 Singapore)
- IMS Program on Quantitative Finance Workshop 3: Asset Pricing and Risk Management (26-30 Aug 2019 Singapore)

Selected Recent Invited Presentations

- Seminar for the Finance Department, Questrom School of Business, Boston University, Nov 3, 2025
- Columbia-NYU Financial Engineering Colloquium, Columbia University, Oct 9, 2025
- (Plenary Talk) 2025 Workshop on Mathematical Finance, Seoul, May 24-28, 2025
- Mathematical Finance Seminar at TU Berlin, Berlin, Jun 19, 2025
- Mathematical Finance Seminar at Kiel University, Kiel, Jun 17, 2025
- Mathematical Finance Seminar at Bielefeld University, Bielefeld, June 11, 2025
- (Plenary Talk) The 8th Asian Quantitative Finance Conference, Taipei, Aug 8-10, 2024
- (Plenary Talk) The 12th World Congress of the Bachelier Finance Society, Rio de Janeiro, Brazil, Jul 8-12, 2024
- CDT Workshop, Imperial College London, Jun 21, 2024
- The 1st ETH–Hong Kong–Imperial Mathematical Finance Workshop, London, U.K., Jun 17-20, 2024
- Workshop on Mathematical Finance and Insurance, Peking University, Beijing, China, Apr 23-26, 2024
- Recent Advances in Stochastic Control, Machine Learning and Quantitative Finance, Shanghai Jiaotong University, Shanghai, China, Apr 15-19, 2024
- Stochastics in Mathematical Finance and Physics, Hammamet, Tunisia, Oct 16-20, 2023
- (Semi-Plenary Talk) The Sixteenth Annual Risk Management Conference, Singapore, Jul 31, 2023
- Control and Optimisation Pisa 2023, Pisa, Italy, May 8-10, 2023

Publications in Refereed Journals

1. M. Dai, Y. Sun, Z. Xu, and X. Zhou, Learning to optimally stop diffusion processes, with applications to finance, Management Science, forthcoming
2. M. Dai, Y. Lei , H. Liu, and C. Yang, Optimal tax-timing strategy with transaction costs, Management Science, forthcoming
3. M. Dai, S. Qian, L. Qin and J. Xu, Life-time portfolio and consumption choice with defined contribution plans, Finance and Stochastics, (2026) 30, 705-764
4. M. Dai, C. Qin, and N. Wang, Dynamic trading with realization utility, The Journal of Finance, (2026) 81(1), 189-238.
5. Y. Cao, M. Dai, S. Kou, L. Li, and C. Yang, Designing stable coins, Mathematical Finance, (2025) 35(1), 263-294.
6. M. Dai, X. Giroud, Wei Jiang, and N. Wang, A q theory of internal capital markets, The Journal of Finance, (2024), 79(2), 1147-1197.
7. M. Dai, S. Qian, and H. Huang, Variational inequality problems in finance, SCIENTIA SINICA Mathematica, (2024), 54(3), 1-22.
8. M. Dai, Y. Dong and Y. Jia, Learning equilibrium mean-variance strategy, Mathematical Finance, (2023), 33(4), 1166-1212.
9. M. Dai, S. Kou, H.M. Soner, and Chen Yang, Leveraged exchange-traded funds with market closure and frictions, Management Science, (2023), 69(4), 2517-2535.
10. M. Dai, Y. Jiang, H. Liu, and J. Xu, A rational theory for disposition effects, Review of Economic Dynamics, (2023), 47, 131-157.
11. M. Dai, S. Kou, Shuaijie Qian, and X. Wan, Non-concave utility optimization with portfolio bounds, Management Science, (2022), 68(11), 8368–8385.
12. X. Chen, M. Dai, Wei Jiang, and C. Qin, Asymptotic analysis of long-term investment with two illiquid and correlated assets, Mathematical Finance, (2022), 32(4), 1133-1169.
13. M. Dai, S. Kou, and C. Yang, A stochastic representation for nonlocal parabolic PDEs with applications, Mathematics of Operations Research, (2022), 47(3), 1707-1730.
14. M. Dai, H. Jin, S. Kou, and Y. Xu, Robo-advising: A dynamic mean-variance approach, Digital Finance, (2021), 3, 81-97.
15. B. Bian, X. Chen, M. Dai, and S. Qian, Penalty method for portfolio selection with capital gains tax, Mathematical Finance, (2021), 31(3), 1013–1055.
16. Y. Chen, M. Dai, L. Goncalves-Pinto, J. Xu, and C. Yan, Incomplete information and the liquidity premium puzzle, Management Science, (2021), 67(9), 5703-5729.
17. M. Dai, H. Jin, S. Kou, and Y. Xu, A dynamic mean-variance analysis for log returns, Management Science, (2021), 67(2), 1093–1108.
18. M. Dai, Y. Jia and S. Kou, The wisdom of the crowd and prediction markets, Journal of Econometrics, (2021), 222(1), 561-578.

19. M. Dai, L. Goncalves-Pinto and J. Xu, How does illiquidity affect delegated portfolio choice? Journal of Financial and Quantitative Analysis, (2019), 54(2), 539-585.

20. M. Dai, S. Huang, and J. Keppo, Opaque bank assets and optimal equity capital, Journal of Economic Dynamics and Control, (2019), 100(3), 369-394.

21. J. Cai, X. Chen, and M. Dai, Portfolio selection with capital gains tax, recursive utility, and regime switching, Management Science, (2018), 64(5), 2308-2324.

22. M. Dai, Z. Yang, Q. Zhang, and Q. Zhu, Optimal trend following trading rules, Mathematics of Operations Research, (2016), 41(2), 626-642.

23. M. Dai and Z. Yang, A note on finite horizon optimal investment and consumption with transaction costs, Discrete and Continuous Dynamical Systems - Series B, (2016), 21(5), 1445-1454.

24. M. Dai, L. Tang and X.Y. Yue, Calibration of stochastic volatility models: A Tikhonov regularization approach, Journal of Economic Dynamics and Control, (2016), 64(3), 66-81.

25. M. Dai, P.F. Li, H. Liu, and Y. Wang Portfolio choice with market closure and implications for liquidity premia, Management Science, (2016), 62(2), 368-386.

26. M. Dai, H. Liu, C. Yang, and Y.F. Zhong, Optimal tax-timing with asymmetric long-term/short-term capital gains tax, Review of Financial Studies, (2015), 28(9), 2687-2721.

27. Y. Chen, M. Dai, J. Xu, and M. Xu Superhedging under ratio constraint, Journal of Economic Dynamics and Control, (2015), 58, 250-264.

28. M. Dai, J. Keppo, and T. Maull, Hiring, firing and employment protection, Journal of Economic Dynamics and Control, (2015), 56, 55-81.

29. M. Dai, L. Jiang and J. Lin, Pricing corporate debt with finite maturity and Chapter 11 proceedings, Quantitative Finance, (2013), 13(2), 1855-1861.

30. X. Chen and M. Dai, Characterization of optimal strategy for multi-asset investment and consumption with transaction costs, SIAM Journal on Financial Mathematics, (2013), 4(1), 857-883.

31. N. Chen, M. Dai and X.W. Wan, A non-zero-sum game approach to convertible bonds: tax benefit, bankruptcy cost and early/late calls, Mathematical Finance, (2013), 23(1), 57-93.

32. M. Dai, Z. Yang and Y.F. Zhong, Optimal stock selling based on the global maximum, SIAM Journal on Control and Optimization, (2012), 50, 1804-1822.

33. M. Dai, H.F. Wang and Z. Yang, Leverage management in a bull-bear switching market, Journal of Economic Dynamics and Control, (2012), 1585-1599.

34. M. Dai and Y.F. Zhong, Optimal stock selling/buying strategy with reference to the ultimate average, Mathematical Finance, (2012), 22(1):165–184.

35. B. Bian, M. Dai, L. Jiang, J. Zhang and Y.F. Zhong, Optimal decision for selling an illiquid stock, Journal of Optimization Theory and Applications, (2011), 151(2):402-417.

36. M. Dai and Z.Q. Xu, Optimal redeeming strategy of stock loans with finite maturity, Mathematical Finance, (2011), 21(4):775-793

37. M. Dai, H.Q. Jin and H. Liu, Illiquidity, position limits, and optimal investment for mutual funds, Journal of Economic Theory, (2011), 146:1598–1630
38. M. Dai, Y.F. Zhong and Y.K. Kwok, Optimal arbitrage strategies on stock index futures under position limits, Journal of Futures Market, (2011), 31(4):394-406
39. M. Dai, Q. Zhang and Q. Zhu, Trend following trading under a regime switching model, SIAM Journal on Financial Mathematics, (2010), 1:780-810
40. M. Dai and Y.F. Zhong, Penalty methods for continuous-time portfolio selection with proportional transaction costs, Journal of Computational Finance, (2010), 13(3):1-31
41. M. Dai, Z.Q. Xu and X.Y. Zhou, Continuous-time mean-variance portfolio selection with proportional transaction costs, SIAM Journal on Financial Mathematics, (2010), 1(1):96-125
42. M. Dai, P.F. Li and J.E. Zhang, A lattice pricing algorithm for moving-average barrier options, Journal of Economic Dynamics and Control, (2010), 34(3):542-554
43. M. Dai, L. Jiang, P.F. Li and F.H. Yi, Finite horizon optimal investment and consumption with transaction costs, SIAM Journal on Control and Optimization, (2009), 48(2):1134-1154
44. M. Dai and F.H. Yi, Finite horizon optimal investment with transaction costs: a parabolic double obstacle problem, Journal of Differential Equations, (2009), 246:1445-1469
45. L.X. Wu and M. Dai, Pricing jump risk with utility indifference, Quantitative Finance, (2009), 9(2):177-186
46. M. Dai, Y.K. Kwok and J. Zong, Guaranteed minimum withdrawal benefit in variable annuities, Mathematical Finance (2008), 18(4):595-611
47. M. Dai and Y.K. Kwok, Optimal multiple stopping models of reload options and shout options, Journal of Economic Dynamics and Control (2008), 32(7):2269-2290
48. M. Dai, Y.K. Kwok and H. You, Intensity-based framework and penalty formulation of optimal stopping problems, Journal of Economic Dynamics and Control (2007), 31(12):3860-3880
49. Z. Yang, F.H. Yi and M. Dai, A parabolic variational inequality arising from the valuation of strike reset options, Journal of Differential Equations (2006), 230:481-501
50. M. Dai and Y.K. Kwok, Characterization of optimal stopping regions of American path dependent options, Mathematical Finance (2006), 16(1):63-82
51. M. Dai and Y.K. Kwok, Optimal policies of call with notice period requirement for American warrants and convertible bonds, Asia Pacific Financial Markets (2005), 12(4):353-373
52. M. Dai and Y.K. Kwok, American options with lookback payoff, SIAM Journal on Applied Mathematics (2005), 66(1):206-227
53. M. Dai and Y.K. Kwok, Options with combined reset rights on strike and maturity, Journal of Economic Dynamics and Control (2005), 29(9):1495-1515
54. M. Dai and Y.K. Kwok, Valuing employee reload options under time vesting requirement, Quantitative Finance (2005), 5(1):61-69

55. M. Dai, H.Y. Wong and Y.K. Kwok, Quanto lookback options, Mathematical Finance (2004), 14(3):445-467

56. M. Dai,Y.K. Kwok and L.X. Wu, Optimal shouting policies of options with strike reset rights, Mathematical Finance (2004), 14(3):383-401

57. M. Dai and Y.K. Kwok, Knock-in American options, Journal of Futures Markets (2004), 24(2):179-192

58. L. Jiang and M. Dai, Convergence of binomial tree method for European/American path-dependent options, SIAM Journal on Numerical Analysis (2004), 42(3):1094-1109

59. M. Dai, One-state variable binomial models for European-/American-style geometric Asian options, Quantitative Finance (2003), 3(4):288-295

60. M. Dai, Y.K. Kwok and L.X. Wu, Options with multiple reset rights, International Journal of Theoretical and Applied Finance (2003), 6(5):637-653

61. M. Dai, A closed form solution to perpetual American floating strike lookback option, Journal of Computational Finance (winter 2000/2001), 4(2):63-68

62. M. Dai, A modified binomial tree method for currency lookback options, Acta Mathematica Sinica, (2000), 16(3):445-454