Vita of Yue-Kuen Kwok

Department of Mathematics
Hong Kong University of Science and Technology
Clear Water Bay, Hong Kong

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Date of preparation: September, 2020

Education

Institution	*Degree*	*Year conferred*	*Field of study*
Brown University	PhD	July 1985	Applied Mathematics
Brown University	MSc	May 1983	Applied Mathematics
Hong Kong University	BSc	May 1980	Engineering

Employment history since joining HKUST

Lecturer	July 1990 – June 1994
Senior lecturer	July 1994 – June 2006
Professor	July 2006 – present

Research, Scholarship, and Professional Involvement

Publications in refereed journals

1. Y.K. Kwok and L. Sirovich, "On some aspects of the transonic controversy," *SIAM Journal of Applied Math*., vol. 47, p.279-295 (1987).
2. Y.K. Kwok, "A regular perturbation method for subcritical flow over a two-dimensional airfoil," *IMA Journal of Applied Mathematics*, vol. 43, p.71-81 (1989).
3. Y.K. Kwok and D. Barthez, "An efficient algorithm for the numerical inversion of Laplace transforms," *Inverse Problems*, vol. 5, p.1089-1095 (1989).
4. Y.K. Kwok, "Conjugate complex variables method for the computation of gravity anomalies," *Geophysics*, vol. 54, p.1629-1637 (1989).
5. Y.K. Kwok, "The use of the Euler functions for error estimates of the trapezoidal and Simpson's quadratures," *International Journal on Mathematics Education in Science and Technology*, vol. 21, p.863-870 (1990).

6. Y.K. Kwok, "Singularities in gravity computation for vertical cylinders and prisms," *Geophysical Journal*, vol. 104, p.1-10 (1991).
7. Y.K. Kwok, "Structures of the nearest singularities of a regular perturbation series," *Communications in Applied Numerical Methods*, vol. 7, p.19-28 (1991).
8. Y.K. Kwok, "Gravity gradient tensors due to a polyhedron with polygonal facets," *Geophysical Prospecting*, vol. 39, p.435-443 (1991).
9. Y.K. Kwok, "Contour integral for gravity computation of horizontal 2 1/2-D bodies with variable density," *Applied Mathematical Modelling*, vol. 15, p.98-103 (1991).
10. Y.K. Kwok and D. Barthez, "Pade and upwinding finite difference schemes for the quantum mechanical equation of motion," *Communications in Applied Numerical Methods*, vol. 7, p.639-647 (1991).
11. Y.K. Kwok, "Applications of MACSYMA to solutions of ordinary differential equations," *International Journal on Mathematics Education in Science and Technology*, vol. 22, p.877-888 (1991).
12. Y.K. Kwok, "Stability analysis of six-point finite difference schemes for the constant coefficient convective-diffusion equation," *Computers and Mathematics with Applications*, vol. 23, p.3-11 (1992).
13. Y.K. Kwok, "Frequency domain expressions for surface and borehole gravity potential due to two- and three-dimensional mass models," *Pure and Applied Geophysics*, vol. 139, p.241-253 (1992).
14. Y.K. Kwok, "Analysis of computer extended series," *Scientific Computation*, Series in Applied Mathematics, vol. 1, edited by T. Chan and Z.C. Shi, p.56-65, World Scientific Press (1992).
15. Y.K. Kwok and L. Beyer, "Gravity due to a body with rotational symmetry about a vertical axis," *Geophysics*, vol. 58, p.298-306 (1993).
16. Y.K. Kwok and K.K. Tam, "Stability analysis of three-level difference schemes for initial-boundary problems for multidimensional convective-diffusion equations," *Communications in Numerical Methods in Engineering*, vol. 9, p.595-605 (1993).
17. Y.K. Kwok and K.K. Tam, "Linearized stability analysis of staggered-grid difference schemes for multidimensional viscous incompressible flows," *Numerical Methods for Partial Differential Equations*, vol. 9, p.313-322 (1993).
18. Y.K. Kwok and K.K. Tam, "Modified quadrature formula for integrand with nearby poles," *Applied Mathematics Letters*, vol. 6, p.63-65 (1993).
19. Y.K. Kwok, H.C. Huang and R.H. Chan, "Numerical analysis and scientific computation in Hong Kong," *Computational Mathematics in China*, *Contemporary Mathematics Series*, vol. 163, p. 77-92, *American Mathematical Society* (1994).
20. C. Wu and Y.K. Kwok "Linear hydrodynamical stability of two-layer inclined flow with viscosity and density stratifications," *IMA Journal of Applied Mathematics*, vol. 54, p.245-256 (1995).
21. Y.K. Kwok and C. Wu, "Fractional step algorithm for solving a multi-dimensional diffusion-migration equation," *Numerical Methods for Partial Differential Equations*, vol.11, p.389-397 (1995).
22. Y.K. Kwok and K.K. Tam, "Numerical quadrature formulas through the theory of analytic functions," *International Journal on Mathematics Education in Science and Technology*, vol. 26, p.37-44 (1995).

23. Y.K. Kwok, “Fourier analysis of iterative schemes for solving the biharmonic equation,” *International Journal of Computer Mathematics*, vol. 58, p.95-101 (1995).
24. Y.K. Kwok, “Accuracy and stability analysis of numerical schemes for the shallow water model,” *Numerical Methods for Partial Differential Equations*, vol. 12, p.85-98 (1996).
25. Y.K. Kwok and C. Wu, “Numerical simulation of electrochemical diffusion-migration model with reaction at electrodes,” *Computer Methods in Applied Mechanics and Engineering*, vol. 132, p.305-317 (1996).
26. S.T. Luk and Y.K. Kwok, “Second order projection algorithms for viscous incompressible flow simulation,” *International Journal of Computational Fluid Dynamics*, vol. 8, p.215-220 (1997).
27. J.C. Li, Y.K. Kwok and J.C.F. Fung, “Vortex dynamics in the studies of looping in tropical cyclone tracks,” *Fluid Dynamics Research*, vol. 21, p.57-71 (1997).
28. L.X. Wu and Y.K. Kwok, “A front-fixing finite difference method for the valuation of American options,” *Journal of Financial Engineering*, vol. 6, p.83-97 (1997).
29. Y.D. Zhang and Y.K. Kwok, “Convergence analysis of MAC schemes for viscous incompressible flows,” *Numerical Methods for Partial Differential Equations*, vol. 13, p.459-482 (1997).
30. Y.K. Kwok, L.X. Wu and H. Yu, “Pricing multi-asset options with an external barrier,” *International Journal of Theoretical and Applied Finance*, vol. 1, p.523-541 (1998).
31. L.X. Wu, Y.K. Kwok and H. Yu, “American Asian options,” *International Journal of Theoretical and Applied Finance*, vol. 2, p.101-111 (1999). The article is reproduced in “International Securities,” edited by G. Philippatos, Edward Elgar Publishing Ltd. (2001).
32. G.H. Fang, Y.K. Kwok, J. Yu and Y.H. Zhu, “Numerical simulation of principal tidal constituents in the South China Sea, Gulf of Tonkin and Gulf of Thailand,” *Continental Shelf Research*., vol. 19, p.845-869 (1999).
33. Y.K. Kwok and H.Y. Wong, “Currency-translated foreign equity options with path dependent features and their multi-asset extensions,” *International Journal of Theoretical and Applied Finance*, vol. 3, p.257-278 (2000).
34. Y.K. Kwok and L. Wu, “Effects of callable feature on early exercise feature,” *Review of Derivatives Research*, vol. 4, p.189-211 (2000).
35. Y.K. Kwok and K.W. Lau, “Accuracy and reliability considerations of option pricing algorithms,” *Journal of Futures Markets*, vol. 21, p.875-903 (2001).
36. Y.K. Kwok and K.W. Lau, “Pricing algorithms for options with exotic path dependence,” *Journal of Derivatives*, p.28-38 (Fall, 2001).
37. H. Yu, Y.K. Kwok and L.X. Wu, “Early exercise policies of American floating and fixed strike lookback options,” *Nonlinear Science*, vol. 47, p.4591-4602 (2001).
38. Y.K. Kwok, H.Y. Wong and K.W. Lau, “Pricing algorithms of multivariate path dependent options,” *Journal of Complexity*, vol. 17, p.773-794 (2001).
39. H. Yu and Y.K. Kwok, “Contingent claim approach for analyzing the credit risk of defaultable currency swaps,” *AMS/IP Studies in Advanced Mathematics*, vol. 26, p.79-92 (2002).
40. C.C. Chu and Y.K. Kwok, “No arbitrage approach for pricing credit spread derivatives,” *Journal of Derivatives*, Spring issue, p.51-64 (2003).

41. C.C. Chu and Y.K. Kwok, "Discussion on pricing perpetual fund protection with withdrawal option," *North American Actuarial Journal*, vol. 7(2), p.77-81 (2003).
42. M. Dai, Y.K. Kwok and L.X. Wu, "Options with multiple reset rights," *International Journal of Theoretical and Applied Finance*, vol. 6(6), p.637-653 (2003).
43. H.Y. Wong and Y.K. Kwok, "Jump diffusion models for risky debts: quality spread differentials, *International Journal of Theoretical and Applied Finance*, vol. 6(6), p.655-662 (2003).
44. H.Y. Wong and Y.K. Kwok, "Sub-replication and replenishing premium: efficient pricing of multi-state lookbacks," *Review of Derivatives Research*, vol. 6, p.83-106 (2003).
45. H.Y. Wong and Y.K. Kwok, "Multi-asset barrier options and occupation time derivatives," *Applied Mathematical Finance*, vol. 10, p.245-266 (2003).
46. M. Dai and Y.K. Kwok, "Knock-in American options," *Journal of Futures Markets*, vol. 24(2), p.179-192 (2004).
47. K.W. Lau and Y.K. Kwok, "Anatomy of option features in convertible bonds," *Journal of Futures Markets*, vol. 24(6), p.513-532 (2004).
48. C.C. Chiu and Y.K. Kwok, "Reset and withdrawal rights in dynamic fund protection," *Insurance: Mathematics and Economics*, vol. 34(2), p.273-295 (2004).
49. M. Dai, Y.K. Kwok and L.X. Wu, "Optimal shouting policies of options with reset right," *Mathematical Finance*, vol. 14(3), p.383-401 (2004).
50. M. Dai, H.Y. Wong and Y.K. Kwok, "Quanto lookback options," *Mathematical Finance*, vol. 14(3), p.445-467 (2004).
51. M. Dai and Y.K. Kwok, "Valuing employee reload options under time vesting requirement," *Quantitative Finance*, vol. 5(1), p.61-69 (2005).
52. C. Xu and Y.K. Kwok, "Integral price formulas for lookback options," *Journal of Applied Mathematics*, vol. 2005(2), p.117-125 (2005).
53. K.W. Lau and Y.K. Kwok, "Valuation of employee reload options in utility maximization framework," *International Journal of Theoretical and Applied Finance*, vol. 8(5), p.659-674 (2005).
54. M. Dai and Y.K. Kwok, "Options with combined reset rights on strike and maturity," *Journal of Economic Dynamics and Control*, vol. 29, p.1495-1515 (2005).
55. M. Dai and Y.K. Kwok, "American options with lookback payoffs," *SIAM Journal of Applied Mathematics*, vol. 66(1), p.206-227 (2005).
56. S.Y. Leung and Y.K. Kwok, "Credit default swap valuation with counterparty risk," *Kyoto Economics Review*, vol. 74(1), p.25-45 (2005).
57. M. Dai and Y.K. Kwok, "Optimal policies of call with notice period requirement for American warrants and convertible bonds," *Asia-Pacific Financial Markets*, vol. 12(4), p.353-373 (2005).
58. M. Dai and Y.K. Kwok, "Characterization of optimal stopping regions of American path dependent options," *Mathematical Finance*, vol. 16(1), p.63-82 (2006).
59. K.W. Lau and Y.K. Kwok, "Optimal execution strategy of liquidation," *Journal of Industrial and Management Optimization*, vol. 2(2), p.135-144 (2006)
60. C.C. Chu and Y.K. Kwok, "Pricing participating policies with rate guarantees," *International Journal of Theoretical and Applied Finance*, vol. 9(4), p.517-532 (2006).

61. K.S. Leung and Y.K. Kwok, “Distribution of occupation times for CEV diffusions and pricing of alpha-quantile options,” *Quantitative Finance*, vol. 7(1), p.87-94 (2007).
62. C.C. Chu and Y.K. Kwok, “Valuation of guaranteed annuity options in affine term structure models,” *International Journal of Theoretical and Applied Finance*, vol. 10(2), p.363-387 (2007).
63. J. Kong and Y.K. Kwok, “Real options in strategic investment games between two asymmetric firms,” *European Journal of Operational Research*, vol. 181, p.967-985 (2007).
64. C.C. Chu and Y.K. Kwok, “Target redemption note,” *Journal of Futures Markets*, vol. 27, p.535-554 (2007).
65. M. Dai, Y.K. Kwok and H. You, “Intensity-based framework and penalty formulation of optimal stopping problems,” *Journal of Economic Dynamics and Control*, vol. 31, p.3860-3880 (2007).
66. K.S. Leung, Y.K. Kwok and S.Y. Leung, “Finite time dividend-ruin models,” *Insurance: Mathematics and Economics*, vol. 42, p.154-162 (2008).
67. M. Dai and Y.K. Kwok, “Optimal multiple stopping models of reload options and shout options,” *Journal of Economic Dynamics and Control*, vol. 32, p.2269-2290 (2008).
68. K.S. Leung and Y.K. Kwok, “Employee stock option valuation with repricing feature,” *Quantitative Finance*, vol. 8(6), p.561-569 (2008).
69. M. Dai, Y.K. Kwok and J. Zong, “Guaranteed minimum withdrawal benefit in variable annuities,” *Mathematical Finance*, vol. 18(4), p.595-611 (2008).
70. K.S. Leung and Y.K. Kwok, “Counterparty risk for credit default swaps: Markov chain interacting intensities model with stochastic intensity,” *Asia-Pacific Financial Markets*, vol. 16, p.169-181 (2009).
71. Y.K. Kwok, “Lattice tree methods for strongly path dependent options,” *Encyclopedia of Quantitative Finance*, Cont, R. (editor), John Wiley and Sons Ltd, Chichester, United Kingdom, p.1022-1027 (2010).
72. C.M. Leung and Y.K. Kwok, “Real options games analysis of sleeping patents,” *Decisions in Economics and Finance*, vol. 34(1), p.41-65 (2011).
73. M. Dai, Y.F. Zhong and Y.K. Kwok, “Optimal arbitrage strategies on stock index futures under position limits,” *Journal of Futures Markets*, vol. 31, p.394-406 (2011).
74. W.D. Zheng and Y.K. Kwok, “Convexity meets replication: hedging of swap derivatives and annuity options,” *Journal of Futures Markets*, vol. 31, p.659-678 (2011).
75. J.J. Peng, K.S. Leung and Y.K. Kwok, “Pricing guaranteed minimum withdrawal benefits under stochastic interest rates,” *Quantitative Finance*, vol. 12(6), p.933-941 (2012).
76. C.M. Leung and Y.K. Kwok, “Patent-investment games under asymmetric information,” *European Journal of Operational Research*, vol. 223, p.441-451 (2012).
77. Y.K. Kwok, K.S. Leung and H.Y. Wong, “Efficient option pricing using the Fast Fourier transform," p.579-603, *Handbook of Computational Finance*, Springer (2012).
78. W.D. Zheng and Y.K. Kwok, “Closed form pricing formulas for discretely sampled generalized variance swaps,” *Mathematical Finance*, vol. 24(4), p.855-881 (2014).

79. W.D. Zheng and Y.K. Kwok, "Saddlepoint approximation methods for pricing derivatives on discretely sampled realized variance," *Applied Mathematical Finance*, vol. 21(1), p.1-31 (2014).
80. P.P. Zeng and Y.K. Kwok, "Pricing barrier and Bermudan style options under time-changed Levy processes: fast Hilbert transform approach," *SIAM Journal on Scientific Computing*, vol. 36(3), p.B450-B485 (2014).
81. T.K. Chung and Y.K. Kwok, "Equity-credit modeling under affine jump-diffusion-models with jump-to-default," *International Journal of Financial Engineering*, vol. 1(2) 1450017, 25 pages (2014).
82. C.M. Leung and Y.K. Kwok, "Numerical algorithms for R&D stochastic control models," *Journal of Computational Finance*, vol. 18(1), p.1-21 (2014).
83. Y.T. Huang and Y.K. Kwok, "Analysis of optimal dynamic withdrawal policies in withdrawal guaranteed products," *Journal of Economic Dynamics and Control*, vol. 45, p.19-43 (2014).
84. Y.K. Kwok, "Game option models of convertible bonds: Determinants of call policies," *Journal of Financial Engineering*, vol. 1(4), p.1-19 (2014).
85. W.D. Zheng and Y.K. Kwok, "Fourier transform algorithms for pricing and hedging discretely sampled exotic variance products and volatility derivatives under additive processes," *Journal of Computational Finance*, vol. 18(2), p.3-30 (2014).
86. C.M. Leung, N. Chen and Y.K. Kwok, "Game options analysis of the information role of call policies in convertible bonds," *Applied Mathematical Finance*, vol. 22(5), p.421-449 (2015).
87. J.J. Wang, C.M. Leung and Y.K. Kwok, "Stochastic control model for R&D race in a mixed duopoly with spillovers and knowledge stocks," *Decisions in Economics and Finance*, vol. 38(2), p.177-195 (2015).
88. P.P. Zeng, Y.K. Kwok and W.D. Zheng, "Fast Hilbert transform algorithms for pricing discrete timer options under stochastic volatility models," *International Journal of Theoretical and Applied Finance*, vol. 18(7), 1550046 (26 pages) (2015).
89. C.H. Yuen, W.D. Zheng and Y.K. Kwok, "Pricing exotic variance swaps under 3/2-stochastic volatility models," *Applied Mathematical Finance*, vol. 22(5), p.421-449 (2015).
90. W.D. Zheng and Y.K. Kwok, "Pricing options on discrete realized variance with partially exact and bounded approximation," *Quantitative Finance*, vol. 15(12), p.2011-2019 (2015).
91. W.D. Zheng, C.H. Yuen and Y.K. Kwok, "Numerical algorithms for pricing discrete variance and volatility derivatives under time-changed Levy-processes,' *International Journal of Theoretical and Applied Finance*, vol. 19(2), 1650011 (29 pages) (2016).
92. Y.T. Huang and Y.K. Kwok, "Regression-based Monte Carlo methods for stochastic control models: variable annuities with lifelong guarantees," *Quantitative Finance*, vol. 16(6), p.905-928 (2016).
93. P.P. Zeng and Y.K. Kwok, "Pricing bounds and approximations for discrete arithmetic Asian options under time-changed Levy processes," *Quantitative Finance*, vol. 16(9), p.1375-1391 (2016).
94. C.M. Leung and Y.K. Kwok, "Real options game models of R&D competition between asymmetric firms with spillovers," *Decisions in Economics and Finance*, vol. 39(2), p.259-291 (2016).
95. T.K. Chung and Y.K. Kwok, "Enhanced equity-credit modeling for contingent convertibles," *Quantitative Finance*, vol. 16(10), p.1511-1527 (2016).

96. C.M. Leung and Y.K. Kwok, “Numerical pricing of Coco bonds with Parisian trigger feature using the Fortet method,” *International Journal of Theoretical and Applied Finance*, vol. 20(7), 1750046 (2017).
97. Y.T. Huang, P.P. Zeng and Y.K. Kwok, “Optimal initiation of Guaranteed Lifelong Minimum Withdrawal with dynamic withdrawals,” *SIAM Journal on Financial Mathematics*, vol. 8, p.804-840 (2017).
98. C.M. Leung and Y.K. Kwok, “Real signaling game option models for dynamic acquisition under information asymmetry,” *Decisions in Economics and Finance*, vol. 41, p.35-63 (2018).
99. QQ. Wang and Y.K. Kwok, “Signaling game models of equity financing under information asymmetry,” *International Journal of Financial Engineering*, vol. 6(1), 1950002, 38 pages (2019).
100. B. Dong, W. Wu and Y.K. Kwok, “Willow tree algorithms for pricing guaranteed minimum withdrawal benefits under jump-diffusion and CE models, *Quantitative Finance*, vol. 19(10), 1741-1761 (2019).
101. C.F. Ma, W. Xu and Y.K. Kwok, “Willow tree algorithms for pricing VIX derivatives under jump-diffusion dynamics of index and variance process,” *International Journal of Financial Engineering*. vol. 7(1), 2050003, 28 pages (2020).
102. Y.T. Zhang and Y.K. Kwok, “Saddlepoint approximations to tail expectations under non-Gaussian base distributions,” *Journal of Applied Statistics*, vol. 47(11), 1936-1956 (2020).
103. Q.Q. Wang and Y.K. Kwok, “Real option signaling games of debt financing
104. using equity guarantee swaps under asymmetric information,” *International Journal of Theoretical and Applied Finance*, vol. 23(5), 2050036, 37 pages (2020).
105. Zhenzhen Hunag and Y.K. Kwok, “Efficient risk measures calculations for generalized CreditRisk$^+$ model,” Working paper.

Conference proceedings papers and professional articles

1. Y.K. Kwok, “Motion of an artificial satellite about the earth,” *UMAP Module 695* (1989).
2. Y.K. Kwok, “Theoretical considerations for finite difference algorithms for simulation of gas-particle flows,” *Conference Proceedings of Asian Pacific Conference on Computational Mechanics*, vol. 2, p.1583-1588 (1991).
3. Y.K. Kwok, L. Wu and H. Pan, "Second order accurate schemes for numerical simulation of shallow water flows," *Proceedings of the First Asian Computational Fluid Dynamics Conference,* p.839-844 (1995).
4. C.C.K. Wu and Y.K. Kwok, “Hydrodynamic stability of two-layer flow down an inclined plane,” *Proceedings of the Second International Conference on Hydrodynamics, Hong Kong*, p.913-918 (1996).
5. Y.K. Kwok and K.W. Lau, “American currency forward,” *Derivatives Week,* November 20 issue (2000).
6. Y.K. Kwok, “Interaction of conversion and call rights,” *Derivatives Week,* February 5 issue (2001).

7. K.W. Lau and Y.K. Kwok, “Optimal calling policies in convertible bonds,” *Proceedings of 2003 International Conference on Computational Intelligence for Financial Engineering* (2003).
8. K.S. Leung and Y.K. Kwok, “Contagion models with interacting default intensity processes,” *Proceedings of the Fourth International Congress of Chinese Mathematicians,* vol. III, p.748-758 (2007).

Research Grants (since joining HKUST)

1. Principal investigator of General Research Fund titled “Saddlepoint approximation methods in pricing exotic derivatives and computing portfolio risk measures,” (2019-2021). Award amount is $485,644.
2. Principal investigator of General Research Fund titled “Risk management of variable annuities with guaranteed lifelong withdrawal benefits,” (2016-2018). Award amount is $325,696.
3. Principal investigator of School Based Initiatives Project Funding titled “Pricing variance derivatives under stochastic volatility using analytic approximation methods and numerical algorithms” (2014-2016). Award amount is $40,000.
4. Principal investigator of General Research Fund titled “Real stochastic game models for R&D races under mixed duopoly,” (2013-2015). Award amount is $395,268.
5. Principal investigator of General Research Fund titled “Convertible bond financing and optimal capital structure,” (2011-2013). Award amount is $359,994.
6. Principal investigator of HKUST Special Research Fund Initiative titled “Innovative Advancements in Quantitative Finance,” (2011-2013). Award amount is $536,000.
7. Principal investigator of General Research Fund titled “Pricing and hedging of volatility derivatives,” (2010-2012). Award amount is $314,870.
8. Principal investigator of a competitive Earmarked Research Grant titled "Modeling default correlation using credit contagion approach," (2005-2007). Award amount is $297,840.
9. Principal investigator of a competitive Earmarked Research Grant titled "Anatomy of option features in convertible bonds," (2002-2004). Award amount is $456,000.
10. Principal investigator of a competitive Earmarked Research Grant titled "Pricing models for American options with time dependent barriers," (1997-1999). Award amount is $200,000.
11. Co-investigator of a Direct Allocation Grant titled "Finite difference algorithms for valuation of financial options with early exercise features," (1996-1997). Award amount is $50,000.
12. Principal investigator of a Direct Allocation Grant titled “Pricing models of commodity-linked bond” (1996-1997). Award amount is $80,000.
13. Principal investigator of a Competitive Earmarked research Grant sponsored by the Hong Kong Research Grants Council titled “A novel approach for solving constrained evolution equations in electrochemistry,” (1993-1995). Award amount is $387,000.
14. Principal investigator of a Competitive Earmarked Research Grant sponsored by the Hong Kong Research Grants Council titled “Geophysical inversion of

surface and borehole gravimetric data" (1992-1994). Award amount is $200,000.

15. Principal investigator of a Zeroth Phase Research Grant of the Hong Kong University of Science and Technology titled "Numerical simulation of gas-solid flows in Fluidization" (1990). Award amount is $20,000.

Editorial boards of research journals and editorial works (since joining HKUST)

1. Associate editor, *International Journal of Financial Engineering*, World Scientific Press (2014 – now)
2. Co-editor, *Series in Quantitative Finance*, Imperial College – World Scientific Press (2008 – now)
3. Associate editor of *Asia Pacific Financial Markets* (2006 - now)
4. Associate editor of *Journal of Economic Dynamics and Control* (2005 - 2010).
5. Co-editor of the Proceedings of IMS Workshop on Applied Probability (1999).
6. Managing Editor of the Bulletin of Hong Kong Mathematical Society (1995 - 1998).
7. Co-editor of 3 volumes of the Proceedings of the First Asian Computational Fluid Dynamics Conference, Hong Kong (1995).
8. Co-editor of the Proceedings of the Scientific Computation Conference, Hong Kong (1994).

Education and Student Mentorship

Teaching award

- Distinguished teaching award, School of Science (1997).

Books

1. Y.K. Kwok and W.D. Zheng, *Saddlepoint Approximation Methods in Financial Engineering*, Springer, 128 pages (2018).
2. Y.K. Kwok, *Mathematical Models of Financial Derivatives*, Springer, 530 pages, second edition (2008).
    - The Chinese translation of the book is published by Science Press, China (2012).
    - This graduate textbook has been cited by ***1046*** research articles (Google Scholar, December, 2019).
3. Y.K. Kwok, *Applied Complex Variables for Scientists and Engineers*, 438 pages, Cambridge University Press, second edition (2010).
    - This undergraduate textbook has been cited by ***56*** research articles (Google Scholar, December, 2019).
4. Y.K. Kwok, *Derivatives Markets in Hong Kong*, 168 pages (in Chinese), published by Ming Pao Publishers (1998).

PhD theses supervised: 13 students graduated

Yu Hong 1998

Wong Hoi Ying	2001
Lau Ka Wo	2004
Leung Seng Yuen	2004
Chu Chi Chiu	2005
Leung Kwai Sun	2006
Kong Jean	2007
Leung Chi Man	2011
Zheng Wendong	2012
Yuen Chi Hung	2014
Wang Jingjing	2014
Zeng Pingping	2014
Huang Yao Tung	2014
Xu Ziqing	ongoing

MPhil theses supervised: 22 students graduated

Yu Wing Ching	1997
Lam Mei Wah	1999
Sun Ko	1999
Wong Hoi Ying	1999
Sum Siu Kei	2000
Anthony Fernandes	2000
Cheng Ying Kai	2000
Wong Him Ting	2000
Chu Chi Chiu	2002
Tang Yin Chiu	2002
Lau Wing Yan	2003
Lau Hon Sum	2003
Choi Chi Hung	2005
Chan Ka Man	2006
Chau Suk Ling	2007
Peng Jingjiang	2007
Xu Qing	2009
Zheng Wendong	2009
Leung Chi Man	2009
Wang Yihua	2010
Wang Yue	2013
Shen Zhiyi	2016
Wang Qiuqi	2019

MSc theses supervised: 2 students graduated

Luk Shum Tim	1994
Lee Man Yiu	1996

University Services and Industrial/Community Outreach

Served as the "chairperson" of various important committees at university and department level

- Department Undergraduate Committee, 1991- 1994

- Senate Committee on Undergraduate Studies, 1998-2000
- Department Postgraduate Committee, 1997-1999
- Minor Program in Mathematics, 2000-2005
- Department Student Liaison Committee, 2003-2005
- Senate Committee on Postgraduate Studies, 2005-2008
- University Administration Subcommittee on Student Housing, 2008 – 2012
- Substantiation committee, Mathematics Department, 2008 – 2009
- Convenor of University Common Core Committee, Arts and Humanities, 2012-2014
- Search committee, Risk Management and Business Intelligence Program, Interdisciplinary Program Office, 2009-2015

Participation in various committees (only the key and more recent committees are listed)

- Member of the University Senate in two terms: 1998-2000 and 2005 – 2008.
- Board of Trustees of the Superannuation Scheme of HKUST (2006 – 2008).
- Member of Task Force on the theme "Enhancing HK's strategic position as a regional and international business center".
- Member of the HKUST 20th Anniversary Organizing Committee.
- Search committee, executive committee, academic review committee, and others at the department level.
- University Committee on Appointments of Professors in Education. 2014 - present

Involvement and leadership in strategic vision and outreach activities

- Co-ordination of the signing of Memorandum of Understanding between HKUST and Tokyo Metropolitan University (2010) on research in Quantitative Finance.

Program directorship of one MSc degree and two multidisciplinary BSc degrees

- Program director (2013 – 2017) and founding program director (2006 – 2009) of MSc degree in Financial Mathematics and Statistics
- Program director of BSc degree in Mathematics and Economics, jointly sponsored by Dept of Math and Dept of Economics (2007 – present)
- Program director (2013- 2014) and Co-program director (2007 – 2013) of BSc degree in Risk Management and Business Intelligence, jointly sponsored by Dept of ISOM, Dept of Math and Dept of CS&E.

Warden of undergraduate resident hall

- Warden of Hall Four (1992 – 1997)
- Warden of Hall One (2005 – 2008)

Academic and community services

- Member of the Academic Committee of the Chinese Society of Computational Mathematics (1991-1993).

- Member, School Examinations Board of the Hong Kong Examinations and Assessments Authority, 1996-2000.
- Invited committee member for the Federation of Youth, Guangzhou (1995-2000).
- External reviewer of MSc in Scientific Computing, Baptist University, 1999.
- Managing Editor of the Bulletin of Hong Kong Mathematical Society, 1995-1998.
- Group leader of Project on Eradicating Poverty in China, 1996-2002.
- President, Society of Hong Kong Scholars, 2003-2004.
- External Examiner for the B.Sc. (Hons) Financial Mathematics at Universiti Tunku Abdul Rahman (UTAR) in Kuala Lumpur, Malaysia (2011 – 2014).
- External Examiner for the B.Sc. (Hons) Quantitative Finance, Singapore Management University, Singapore (2012 – 2014).
- External Examiner for the B.Sc. (Hons) Financial Mathematics at Beijing Normal University – Hong Kong Baptist University, United International College (2012 – 2013).
- External Examiner for the B.Sc. (Hons) in Mathematical Modeling at Universiti Sains Malaysia, Penang, Malaysia (2015 – 2016).

Consultant projects

Two consultant projects on software development of derivative pricing routines with leading financial institutions in Hong Kong

- Indosuez W.I. Carr, 1998. Pricing routines for exotic equity options.
- CitiGroup, 2003. Pricing routines for LIBOR exotics.