Steven Kou

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Education

- Ph.D. in Statistics. May 1995, Columbia University.
- M.A. in Statistics. October 1992, Columbia University.

Administrative Experience

- July 2023 — Now, University Appointments, Promotion, and Tenure Committee (consisting of 16 senior faculty members), Boston University.
- June 2014 — July 2018, Director, Risk Management Institute, National University of Singapore (a university-level institute with a master program and over 40 full-time employees).

Teaching Experience

- August 2018 — Now, Allen and Kelli Questrom Professor in Finance, Questrom School of Business, Boston University.
- May 2016 — July 2018, Class '62 Professor of Mathematics, National University of Singapore.
- June 2013 — May 2016, Provost's Chair Professor of Mathematics, National University of Singapore.
- January 2009 — June 2014, Full Professor, Columbia University.
- July 2004 — December 2008, Tenured Associate Professor, Department of Industrial Engineering and Operations Research, Columbia University.
- January 2001 — June 2004, Associate Professor, Department of Industrial Engineering and Operations Research, Columbia University.
- July 1998 — December 2000, Assistant Professor, Department of Industrial Engineering and Operations Research, Columbia University.

- July 1996 — June 1998, Assistant Professor, Department of Statistics, Univ. of Michigan.
- July 1995 — June 1996, Assistant Professor, Department of Statistics, Rutgers University.

Awards and Honors

- World Top 2% Scientists, since 2020.
- Fellow, IMS (Institute of Mathematical Statistics), since 2018.
- Erlang Prize, Applied Probability Society, INFORMS (Institute for Operations Research and the Management Sciences), 2002.
- Senior Member, INFORMS (Institute for Operations Research and the Management Sciences), since 2024.
- Shahdadpuri Faculty Research Award, Boston University, 2021.
- John van Ryzin Doctoral Dissertation Award, Columbia University, 1995.

Editorial Boards

- Co-Editor, *Digital Finance* (2018 to Now).
- Co-Area-Editor, Financial Engineering, *Operations Research* (2015 to 2023).
- Area Editor, *Operations Research Letters* (2005 to 2010).
- Associate Editors, *Operations Research* (2024 to Now), *Mathematical Finance* (2002 to Now), *Mathematics of Operations Research* (2001 to 2019), *Finance and Stochastics* (2017 to 2020), *Journal of Business and Economic Statistics* (2012 to 2016), *Management Science* (2002 to 2010), *Journal of Computational Finance* (2002 to 2006), *Advances in Applied Probability* (2006 to 2016), *Journal of Applied Probability* (2006 to 2016), *Probability in the Engineering and Information Sciences* (2005 to 2009).

Professional Services

- INFORMS Finance Section, Chair (2022 to 2024), Vice Chair (2011-2015).
- INFORMS Finance Committee, Committee Member (2019 to now).
- INFORMS Lanchester Prize, Committee Member (2016 to 2018).

Grants

- PI, Singapore MOE Academic Research Fund Tier 2 Grant, S$455,218, Sept 2014 - Aug 2017.
- PI, NUS-Université Paris Diderot Joint Grant, S$30,000, June 2017 - May 2018.
- PI, NUS-Humboldt University Joint Grant, S$30,000, June 2015 - May 2017.
- PI, NUS-Université Paris Diderot Joint Grant, S$30,000, June 2014 - May 2016.
- Co-PI, NSF Grant, Computational Mathematics Program, $578,356, Sept 2009 - Aug 2012.
- PI, NSF Grant, Service Enterprise Engineering Operation Program, $273,674, Sept 2005 - Sept 2008.
- Co-PI, NSF Grant, Computational Mathematics Program, $280,000, Sept 2000 - Aug 2003.
- PI, NSF Grant, Operation Research Program, $199,685, Sept 1999 - Aug 2002.

Media Coverage

- *INSIGHTS@QUESTROM*, video posted on January 24, 2023, "Blockchain, Beyond Crypto: An Expert Panel Discussion."
- *INFORMS Analytics*, January 2023, "Are Cryptocurrencies Ponzi Schemes?"
- *INSIGHTS@QUESTROM*, January 11, 2022, "The Wisdom of the Crowd and Prediction Markets."
- *INSIGHTS@QUESTROM*, April 7, 2021. "What Do We Know About Robo-Advising?"
- *Bloomberg*, April 17, 2020. "Riskier CLOs Get Big Boost From S&P in 'New Ratings Shopping'."
- *OR/MS Today* Oct 2009, Forum. "Social Causes of the Financial Crisis."
- *Derivatives Strategy Magazine*, May 2000, pp. 28-32. "The return of jump modeling: is Steven Kou's model more accurate than Black-Scholes?"
- *RISK Magazine*, April 2000, pp. 6-7, "Electoral hedging gains votes."

Formal Doctoral Students and Post-Doctoral Research Fellows in Academia

1. Nan Chen, Professor, Department of Systems Engineering and Engineering Management, Chinese University of Hong Kong, Hong Kong

2. Ning Cai, Professor, Department of Industrial Engineering and Decision Analytics,, Hong Kong University of Science and Technology, Hong Kong

3. Xianhua Peng, Associate Professor, HSBC Business School, Peking University, Shenzhen Campus, China

4. Yingda Song, Associate Professor, Department of Management Science, Antai College of Economics and Management, Shanghai Jiaotong University, China

5. Sang Hu, Assistant Professor, School of Data Science, Chinese University of Hong Kong, Shenzhen Campus, China

6. Yuanyuan Chen, Assistant Professor, Department of Finance, Nanjing University, China

7. Wei Jiang, Assistant Professor, Department of Industrial Engineering and Decision Analytics, Hong Kong University of Science and Technology, Hong Kong

8. Chen Yang, Assistant Professor, Department of Systems Engineering and Engineering Management, Chinese University of Hong Kong, Hong Kong

9. Yanwei Jia, Assistant Professor, Department of Systems Engineering and Engineering Management, Chinese University of Hong Kong, Hong Kong

10. Shuaijie Qian, Assistant Professor, Department of Mathematics, Hong Kong University of Science and Technology, Hong Kong

Publication and Working Papers

FinTech Papers

1. Y. Cao, M. Dai, S. G. Kou, L. Li, and Chen Yang (2025). Designing stablecoins. *Mathematical Finance*. Vol. 35, 263-294.

2. M. Dai, S. G. Kou, L. Qin, and S. Qian (2023). Bitcoin mining and climate damages.

3. M. Dai, W. Jiang, S. G. Kou, and C. Qin (2022). From Hotelling to Nakamoto: The economics of Bitcoin mining.

4. M. Dai. H. Jin, S. G. Kou, and Y. Xu (2021). Robo-advising: A dynamic mean-variance approach. *Digital Finance.* Vol. 3, 81-97.

5. M. Dai. S. G. Kou, and Y. Jia (2021). The wisdom of the crowd and prediction markets. *Journal of Econometrics.* Vol. 222, 561-578.

6. M. Dai, H. Jin, S. G. Kou, and Y. Xu (2021). A dynamic mean-variance analysis for log-returns. *Management Science.* Vol. 67, 1093-1108.

7. N. Cai and S. G. Kou (2019). Econometrics with privacy preservation. *Operations Research.* Vol. 67, 905-926.

Other Papers in Refereed Academic Journals

1. N. Guo, S. G. Kou, B. Wang and R. Wang. (In Press) A theory of credit rating criteria. *Management Science*.
2. G. Li, N. Chen, G. Gallego, P. Gao, and S. G. Kou. (2024) Dealership or Marketplace with Fulfillment Services: A Dynamic Comparison. *Manufacturing and Service Operations Management*. Vol. 26, 1860-1877.
3. N. Chen, P. Gao, and S. G. Kou (2023). Does the prohibition of trade-through hurt liquidity demanders? *Operations Research*, Vol. 71, 1458-1471.
4. M. Dai, S. G. Kou, H. M. Soner, and C. Yang (2023). Leveraged Exchange-Traded Funds with market closure and frictions. *Management Science*, Vol. 69, 2517-2535.
5. M. Dai, S. G. Kou, S. Qian, and X. Wan (2022). Non-Concave Utility Maximization with Portfolio Bounds *Management Science*, Vol. 68, 8368-8385.
6. M. Dai, S. G. Kou, and C. Yang (2022). A stochastic representation for nonlocal parabolic PDEs with applications. *Mathematics of Operations Research*, Vol. 47, 1707-1730.
7. X. D. He, S. G. Kou, and X. H. Peng (2022). Risk measures: Robustness, elicitability, and backtesting. *Annual Review of Statistics and Its Application*, Vol. 9, 141-166.
8. X. Xu, Y. Chen, and S. G. Kou (2021). Discussion on "Text Selection." *Journal of Business and Economic Statistics.* Vol. 39, 883-887.
9. W. Jiang and S. G. Kou (2021). Simulating risk measures via asymptotic expansions for relative errors. *Mathematical Finance.* Vol 31, 907-942.
10. Y. Song, N. Cai, and S. G. Kou (2018). Computable error bounds of Laplace inversion for pricing Asian options. *INFORMS Journal on Computing.* Vol. 30, 636-645.
11. S. G. Kou, X. H. Peng, H. W. Zhong (2018). Asset pricing with spatial interaction. *Management Science*. Vol. 64, 2083-2102.
12. X. He and S. G. Kou (2018). Profit sharing for hedge funds. *Mathematical Finance.* Vol. 28, 50-81.
13. N. Chen, S. G. Kou, C. Wang (2018). A partitioning algorithm for Markov decision processes and its applications to market microstructure. *Management Science*. Vol. 64, 784-803.
14. S. G. Kou, C. Yu, and H. Zhong (2017). Jumps in equity index returns before and during the recent financial crisis: a Bayesian analysis. *Management Science*. Vol. 63, 988-1010.

15. S. G. Kou and X. H. Peng (2016). On the measurement of economic tail risk. *Operations Research*. Vol. 64, 1056-1072.

16. S. G. Kou, H. W. Zhong (2016). First passage times for two-dimensional Brownian motion. *Advances in Applied Probability*. Vol. 48, 1045-1060.

17. N. Cai, Y. Song, and S. G. Kou (2015). A general framework for pricing Asian options under Markov processes. *Operations Research*. Vol. 61, 527-539.

18. N. Cai, S. G. Kou, and Z. Liu (2014). A two-sided Laplace inversion algorithm with computable error bounds and its applications in financial engineering. *Advances in Applied Probability*. Vol. 46, 766-789.

19. S. G. Kou, X. H. Peng, C. C. Heyde (2013) External risk measures and Basel Accords. *Mathematics of Operations Research*. Vol. 38, 393-417.

20. N. Cai and S. G. Kou (2012). Pricing Asian options under a hyper-exponential jump diffusion model. *Operations Research*. Vol. 60, 64-77.

21. N. Cai and S. G. Kou (2011). Option pricing under a mixed-exponential jump diffusion model. *Management Science*. Vol 57, 2067-2081.

22. N. Chen and S. G. Kou (2009). Credit spread, implied volatility and optimal capital structure with jumps. *Mathematical Finance*. Vol 19, 343-378.

23. G. Gallego, S. G. Kou, and R. Phillips (2008). Revenue management of callable products. *Management Science*. Vol 54, 550-564.

24. S. G. Kou, G. Petrella, and H. Wang (2005). Pricing path-dependent options with jump risk via Laplace transforms. *Kyoto Economic Review*. Vol. 74, 1-22.

25. S. C. Kou and S. G. Kou (2004). A diffusion model for growth stocks. *Mathematics of Operations Research*, Vol. 29, 191-212.

26. S. G. Kou and H. Wang (2004). Option pricing under a double exponential jump diffusion model. *Management Science*, Vol. 50, 1178-1192.

27. C. C. Heyde and S. G. Kou (2004). On the controversy over tailweight of distributions. *Operations Research Letters*, Vol. 32, 399-408.

28. S. G. Kou and M. Sobel (2004). Forecasting the vote: an analytical comparison of election markets and opinion polls. *Political Analysis*, Vol. 12, 277-295.

29. G. Petrella and S. G. Kou (2004). Numerical pricing of discrete path-dependent options via Laplace transform. *Journal of Computational Finance*, Vol. 8, 1-37.

30. S. G. Kou and H. Wang (2003). First passage times for a jump diffusion process. *Adv. in Applied Probability*, Vol. 35, 504-531.

31. P. Glasserman and S. G. Kou (2003). Term structure of simple interest rates with jump risk. *Mathematical Finance*, Vol. 13, 383-410.

32. S. C. Kou and S. G. Kou (2003). Modeling growth stocks via size distribution. *Adv. in Applied Probability*, Vol. 35, 641-664.

33. S. G. Kou (2003). On pricing of discrete barrier options. *Statistica Sinica*, Vol. 13, 955-964.

34. S. G. Kou (2002). A jump diffusion model for option pricing. *Management Science*, Vol. 48, 1086-1101.

35. M. Broadie, P. Glasserman, and S. G. Kou (1999). Connecting discrete and continuous path-dependent options. *Finance and Stochastics*, Vol. 3, 55-82.

36. I. Karatzas and S. G. Kou (1998). Hedging American contingent claims with constrained portfolios. *Finance and Stochastics*, Vol. 2, 215-258.

37. M. Broadie, P. Glasserman, and S. G. Kou (1997). A continuity correction for discrete barrier options. *Mathematical Finance*, Vol. 7, 325-349.

38. S. G. Kou and Y. S. Chow (1997). A central limit theorem for the number of success runs: an example of regenerative processes. *Statistica Sinica*, Vol. 7, 157-166.

39. I. Karatzas and S. G. Kou (1996). On the pricing of contingent claims under constraints. *Annals of Applied Probability*, Vol. 6, 321-369.

40. S. G. Kou and Z. Ying (1996). Asymptotics for a 2×2 table with fixed margins. *Statistica Sinica*, Vol. 6, 809-829.

41. P. Glasserman and S. G. Kou (1995). Limits of first passage times to rare sets in regenerative processes. *Annals of Applied Probability*, Vol. 5, 424-445.

42. P. Glasserman and S. G. Kou (1995). Analysis of an importance sampling estimator for tandem queues. *ACM Transactions on Modeling and Computer Simulation*, Vol. 5, 22-42.

Other Working Papers

1. Z. Jiao, S. G. Kou, Y. Liu, R. Wang (2024). Anonymized Risk Sharing.

2. L. Follett, S. G. Kou, M. Stuart, and C. Yu (2023). Inverse leverage effect for cryptocurrencies and meme stocks: a comprehensive framework.

3. X. D. He, S. Hu, and S. G. Kou (2023). Preference-free and menuless screening contracts for fund managers. *Operations Research*, R&R.

4. J. Cvitanic, S. G. Kou, X. Wan, and K. Williams (2023). A general framework for portfolio management: reaching goals while avoiding drawdowns. *Management Science*, R&R.

5. X. D. He, Z. L., Jiang, and S. G. Kou (2023). Portfolio selection under median and quantile maximization. *Management Science*, R&R.

6. Y. Chen and S. G. Kou (2023). How does the introduction of hidden orders affect limit order markets?

7. C. D. Fuh, Y. Jia, and S. G. Kou (2022). A General Framework for Importance Sampling with Latent Markov Processes.

8. M. Dai, S. G. Kou, and C. Qin (2020). A theory of negative prices for exhaustible resources.

9. M. Dai, S. G. Kou, and H. Shao (2020). Inequality curves.

10. Y. Song, N. Cai, and S. G. Kou (2019). A unified framework for computing regime-switching models.

11. M. Dai, S. G. Kou, and C. Qin (2018). Exhaustible resources with production adjustment costs.

12. M. Dai, S. G. Kou, C. Yang, and Z. Yie (2017). The overpricing of leveraged products: a case study of dual-purpose funds in China.

13. S. G. Kou and X. Peng (2017). A monotonic policy iteration algorithm for stochastic control.

14. S. G. Kou, X. Peng, T. Sit, and Z. Ying (2017). Information from options during the crisis: An empirical likelihood method of combining stock and option prices.

15. J. R. Birge, N. Cai, and S. G. Kou (2015). A Two-Factor Model for Electricity Spot and Futures Prices.

16. X. H. Peng and S. G. Kou (2013). Default clustering and pricing of CDO's.

17. M. Cao and S. G. Kou (2013). A uniform renewal theory and continuity corrections for two dimensional barrier and partial barrier probabilities.

18. Z. Huang and S. G. Kou (2012). Analytical solutions for options on two assets with jump risk.

19. S. C. Kou and S. G. Kou (2009). A tale of two growths: stochastic endogenous growth and growth stocks.

Papers in Refereed Edited Books

1. S. G. Kou (2021) FinTech econometrics: Privacy preservation and the wisdom of the crowd. *Innovative Technology at the Interface of Finance and Operations.* Edited by V. Babich, J. Birge, and G. Hilary. Springer.

2. W. Cui, M. Dai, M., S. G. Kou, Y. Zhang, C. Zhang, X. Zhu (2018). Interest rate swap valuation in the Chinese market. *Innovations in Insurance, Risk-and Asset Management.* Edited by K. Glau, D. Linders, A. Min, M. Scherer, L. Schneider, and R. Zagst. World Scientific.

3. S. G. Kou (2008). Lévy processes in asset pricing. *Encyclopedia of Quantitative Risk Analysis and Accessement*, edited by B. S. Everitt and E. L. Melnick. John Wiley & Sons.

4. S. G. Kou (2007). Discrete path-dependent options. *Handbook on Financial Engineering.* Edited by J. Birge and V. Linetsky. North-Holland.

5. S. G. Kou (2007). Jump diffusion models for asset pricing in financial engineering. *Handbook on Financial Engineering.* Edited by J. Birge and V. Linetsky. North-Holland.

6. S. G. Kou and Z. Ying (2006). Analysis of a sequence of dependent 2×2 Tables. *Random Walk, Sequential Analysis and Related Topics. A Festschrift in Honor of Yuan-Shih Chow.* Edited by A. C. Hsiung, Z. Ying, and C. H. Zhang. World Scientific.

Papers in Conference Proceedings

1. S. C. Kou and S. G. Kou. Stochastic endogenous growth and growth stocks (2005). *Proceedings of the NSF DMII Conference 2005.*

2. S. C. Kou and S. G. Kou. Modeling growth stocks (part II) (2002). *Proceedings of the 2002 Winter Simulation Conference*, 1524-1529, IEEE press, New York.

3. P. Glasserman and S. G. Kou (1993). Overflow probabilities in Jackson networks. *Proceedings of the 32nd IEEE Conference on Decision and Control*, 3178-3182, IEEE press, New York.

Papers in Refereed Practitioners' Journals

1. S. C. Kou and S. G. Kou (2001). Modeling growth stocks. *RISK*, December 2001, S34-S37.

2. S. G. Kou and M. Sobel (2001). Hedging electoral risks. *RISK*, April, 2001, 95-98.

Other Published Papers

1. S. G. Kou (2009). Social causes of the financial crisis, October, Forum, *OR/MS Today.*

2. P. Glasserman and S. G. Kou (2006). A Conversation with Chris Heyde. Paul Glasserman and Steven Kou. *Statistical Science.* Volume 21, 286-298.

3. M. Broadie, E. Derman, P. Glasserman, and S. G. Kou (2012). "Financial engineering at Columbia University", Quantitative Finance, 12 (1), 11-14.