Curriculum Vitae

Name: Kim
Given name: Aaron Young Shin
Date of birth: January 13, 1973
Current Position: Associate Professor, College of Business, Stony Brook University
Adjunct Professor, Applied Mathematics & Statistics, Stony Brook University
Address:
Harriman Hall, Room 314D, Stony Brook University, Stony Brook, NY 11794-3775, USA
e-mail: aaron.kim@stonybrook.edu

Education

- Ph.D. in Mathematics, Department of Mathematics, Sogang University, Seoul, South Korea, August 2005, Dissertation: “The modified tempered stable processes with applications to finance.”
- Habilitation in Finance and Statistics, School of Economics and Business Engineering, Karlsruhe Institute of Technology (KIT), Germany, October 19, 2011, Dissertation: “Tempered Stable Models and Finance”

Professional Career

- September 2019 – present : Associate Professor in Finance, College of Business, Stony Brook University
- March 2014 – present : Adjunct Professor in Applied Mathematics & Statistics, Stony Brook University
- August 2013 – August 2019 : Assistant Professor, College of Business, Stony Brook University
- October 2011 – June 2013: Privatdozent (Lecturer) at the School of Economics and Business Engineering, KIT, Germany.
- April 2007–October 2011: Akademischen Mitarbeiter (Academic Staff) at the School of Economics and Business Engineering, KIT, Germany.
- January 2006 – October 2011: Post-graduate Student in Department of Statistics, Econometrics and Mathematical Finance, School of Economics and Business Engineering, KIT, Germany
- September 2005 – December 2005: Part time lecturer in college of business administration, Ajou University, South Korea
- March 2003–December 2005: Part time lecturer in Department of mathematics, Sogang University, South Korea

Refereed Articles

1. Y. S. Kim, H. Kim, J. Choi and F. Fabozzi, (2023) Multi-Asset Option Pricing Using Normal Tempered

Stable Processes with Stochastic Correlation, *Journal of Derivatives,* jod.2022.1.175; https://doi.org/10.3905/jod.2022.1.175

2. C. Peng, Y. S. Kim, S. Mittnik (2022) Portfolio Optimization on Multivariate Regime Switching GARCH Model with Normal Tempered Stable Innovation, *Journal of Risk and Financial Management*, 15(5), 230; https://doi.org/10.3390/jrfm15050230
3. Y. S. Kim (2022). Portfolio Optimization and Marginal Contribution to Risk on Multivariate Normal Tempered Stable Model, *Annals of Operations Research,* 312, 853-881, https://doi.org/10.1007/s10479-022-04613-7.
4. Y. S. Kim, K-H Roh, R. Douady (2022) Tempered Stable Processes with Time Varying Exponential Tails, *Quantitative Finance,* 22(3), 541-561, https://doi.org/10.1080/14697688.2021.1962958.
5. T. Kurosaki, Y. S. Kim (2022), Cryptocurrency portfolio optimization with multivariate normal tempered stable process and Foster-Hart risk, *Finance Research Letters*, 45, 102143, https://doi.org/10.1016/j.frl.2021.102143.
6. T. Li, Y. S. Kim, Q Fan, F. Zhu (2021) Aumann-Serrano index of risk in portfolio optimization, *Mathematical Methods of Operations Research,* 94, 197–217, https://doi.org/10.1007/s00186-021-00753-x
7. S. I., Kim, Y. S. Kim (2021). Factor Copula Model for Portfolio Credit Risk. *International Journal of Theoretical and Applied Finance*, 24 (04), 2150021, https://doi.org/10.1142/S0219024921500217
8. Y. Liu, P. M. Djuric, Y.S. Kim, S.T. Rachev, J. Glimm (2021), Systemic Risk Modeling with Levy Copulas, *Journal of Risk and Financial Management,* 14(6), 251; https://doi.org/10.3390/jrfm14060251
9. X. Shi, Y. S. Kim (2021). Coherent Risk Measure and Normal Mixture Distributions with Application in Portfolio Optimization and Risk Allocation, *International Journal of Theoretical and Applied Finance*, 24 (04), https://doi.org/10.1142/S0219024921500199
10. Y. S. Kim (2021). Sample Path Generation of the Stochastic Volatility CGMY Process and its Application to Path-dependent Option Pricing, *Journal of Risk and Financial Management,* 14 (2), 77, https://doi.org/10.3390/jrfm14020077
11. S. I., Kim, Y. S. Kim (2020). A New Stochastic Process with Long-Range Dependence. *Journal of Statistical Theory and Applications*, 19(13), 432 - 438
12. A. Shirvani, Y. Hu, S. T. Rachev, Y. S. Kim, S. Stoyanov, F. Fabozzi (2020). Option Pricing in Markets with Informed Traders. *International Journal of Theoretical and Applied Finance*.
13. F. Zhu, M. L. Bianchi, Y. S. Kim, F. J. Fabozzi (2020), Learning for infinitely divisible GARCH models in option pricing, *Studies in Nonlinear Dynamics & Econometrics*, Published online, DOI: https://doi.org/10.1515/snde-2019-0088
14. Y. S. Kim, D. Jiang, S. Stoyanov (2019), Long and Short Memory in the Risk-Neutral Pricing Process, *Journal of Derivatives,* 26 (4), 71-88, DOI: https://doi.org/10.3905/jod.2019.1.077
15. Y.S. Kim (2019), Tempered Stable Process, First Passage Time, and Path-dependent Option Pricing, *Computational Management Science,* 16 (1-2), 187-215

16. S. V. Stoyanov, Y. S. Kim, S. T. Rachev and F. J. Fabozzi (2019), Enhancing Binomial and Trinomial Equity Option Pricing Models, *Finance Research Letters*, 28, 185-190
17. H. Fallahgoul, Y. S. Kim, F. J. Fabozzi, J. Park (2019), Quanto Option Pricing with Lévy Models, *Computational Economics*, 53 (3), 1279–1308
18. T. Kurosaki and Y. S. Kim (2019), Foster-Hart optimization for currency portfolio. *Studies in Nonlinear Dynamics & Econometrics.* 23 (2) Publishing Online First, DOI: https://doi.org/10.1515/snde-2017-0119
19. Y. S. Kim, S. V. Stoyanov, S. T. Rachev and F. J. Fabozzi (2018), Another Look at the Ho–Lee Bond Option Pricing Model, *The Journal of Derivatives*, 25 (4) 48-53
20. S. I. Kim, Y. S. Kim, (2018), Tempered stable structural model in pricing credit spread and credit default swap, *Review of Derivatives Research,* 21 (1), 119-148.
21. A. Anand, T. Li, T. Kurosaki, Y. S. Kim (2017), The equity risk posed by the too-big-to-fail banks: A Foster-Hart estimation, *Annals of Operations Research*, 253 (1), 21-41
22. Y. S. Kim (2016), Long-Range Dependence in the Risk-Neutral Measure for the Market on Lehman Brothers Collapse, *Applied Mathematical Finance* 23(4), 309-322.
23. Y. S. Kim, S. Stoyanov, S. Rachev, F. Fabozzi (2016), Multi-purpose binomial model: Fitting all moments to the underlying geometric Brownian motion, *Economics Letters* 145, 225–229
24. A. Anand, T. Li, T. Kurosaki, Y. S. Kim (2016), Foster-Hart Optimal Portfolios *Journal of Banking & Finance* 68, 117–130
25. X. Shi, Zhang L. and Kim Y.S.A. (2016) A Markov Chain Approximation for American Option Pricing in Tempered Stable-GARCH Models. *Front. Appl. Math. Stat*. 1:13. doi: 10.3389/fams.2015.00013
26. H. Fallahgoul, Y. S. Kim, F. J. Fabozzi (2016), Elliptical Tempered Stable Distribution, *Quantitative Finance,* 16, (7), 1069-1087, doi :10.1080/14697688.2015.1111522
27. Y.S. Kim, J. Lee, S. Mittnik, J. Park (2015), Quanto option pricing in the presence of fat tails and asymmetric dependence, *Journal of Econometrics*, 187, (2), 512–520, doi :10.1016/j.jeconom.2015.02.035
28. J. Choi, Y. S. Kim, I. Mitov (2015), Reward-risk momentum strategies using classical tempered stable distribution, *Journal of Banking & Finance* 58, 194-213
29. K. Georgiev, Y.S. Kim, S. Stoyanov (2015), Periodic Portfolio Revision with Transaction Costs, *Mathematical Methods of Operations Research*, 81 (3), 337-359
30. Y.S. Kim (2015), Multivariate Tempered Stable Model with Long-range Dependence and Time-varying Volatility, *Frontiers in Applied Mathematics and Statistics*, 1(1). doi: 10.3389/fams.2015.00001
31. J. Goode, Y.S. Kim, F. J. Fabozzi (2015), Full versus Quasi MLE for ARMA-GARCH Models With Infinitely Divisible Innovations, *Applied Economics incorporating Applied Financial Economics*, 47 (48), 5147-5158
32. N. Tsuchida, R. Giacometti, F. J. Fabozzi, Y. S. Kim, R.J. Frey (2014), Time Series and Copula Dependency Analysis for Eurozone Sovereign Bond Returns, *Journal of Fixed Income*, 24 (1), 75-87
33. M. Bekri, Y. S. Kim, S. T. Rachev (2014) Tempered stable models for Islamic finance asset

management, *International Journal of Islamic and Middle Eastern Finance and Management*, 7(1), 37-60

34. T. Zaevski, Y. S. Kim, R. Denchev, F. J. Fabozzi (2014), Stochastic Volatility models for option pricing with Lévy jump behavior: tempered stable estimation. *International Review of Financial Analysis*, 31, 101-108
35. Y. S. Kim, D. Volkmann (2013), Normal Tempered Stable Copula, *Applied Mathematics Letters*, 26(7), *676-680*
36. H. Fallahgoul, S. M. Hashemiparast, F. J. Fabozzi, Y. S. Kim (2013), Multivariate Stable Distributions and Generating Densities, *Applied Mathematics Letters*, 26 (3), 324–329.
37. A. Beck, Y. S. Kim, S. T. Rachev, M. Feindt, F. J. Fabozzi (2013), Empirical analysis of ARMA-GARCH models in market risk estimation on high-frequency U.S. data, *Studies in Nonlinear Dynamics & Econometrics*, 17 (2), 167–177
38. T. Kurosaki, Y. S. Kim (2013), Systematic Risk Measurement in the Global Banking Stock Market with Time Series Analysis and CoVaR, *Investment Management and Financial Innovations*, 10(1), 184-196
39. T. Kurosaki, Y. S. Kim (2013), Mean-CoAVaR Optimization for Global Banking Portfolio, *Investment Management and Financial Innovations*, 10(2), 15-20
40. S. Klingler, Y. S. Kim, F. J. Fabozzi, S. T. Rachev (2013) Option pricing with time-changed Lévy processes, *Applied Financial Economics*, 23 (15), 1231-1238
41. K. Milanov, O. Kounchev, F. J. Fabozzi, Y. S. Kim, S. T. Rachev (2013), A Binomial-Tree Model for Convertible Bond Pricing, *The Journal of Fixed Income*, Vol. 22, No. 3: pp. 79-94
42. Y. S. Kim, R. Giacometti, S. T. Rachev, F. J. Fabozzi, D. Mignacca (2012), Measuring financial risk and portfolio optimization with a non-Gaussian multivariate model, *Annals of Operations Research*, 201(1), 325-343
43. Y. S. Kim (2012), Fractional Multivariate Normal Tempered Stable Process, *Applied Mathematics Letters*, 25 (12), 2396–2401.
44. Y. S. Kim, F. J. Fabozzi, Z. Lin, and S. T. Rachev (2012), Option pricing and hedging under a stochastic volatility Levy process model, *Review of Derivatives Research*, 15 (1), 81-97.
45. H. Fallahgoul, S. M. Hashemiparast, Y. S. Kim, S. T. Rachev, F. J. Fabozzi (2012), Approximation of Stable and Geometric Stable Distribution, *Journal of Statistical and Econometric Methods*, 1(3), 97-123.
46. M. Scherer, S. T. Rachev, Y.S. Kim, and F, J. Fabozzi (2012), Approximation of skewed and leptokurtic return distributions, *Applied Financial Economics* 22 (16), 1305-1316.
47. Y. S. Kim, S. T. Rachev, M. L. Bianchi, I. Mitov and F. J. Fabozzi (2011), Time series analysis for financial market meltdowns, *Journal of Banking & Finance,* 35, 1879–1891.
48. Y. S. Kim, S. T. Rachev, M. L. Bianchi, and F. J. Fabozzi (2010), Tempered stable and tempered infinitely divisible GARCH models, *Journal of Banking & Finance*, 34, 2096–2109.
49. M. L. Bianchi, S. T. Rachev, Y. S. Kim, and F. J. Fabozzi (2010), Tempered infinitely divisible distributions and processes, *Theory of Probability and Its Applications,* 55 (1), 58-86.

50. Y. S. Kim, S. T. Rachev, M. L. Bianchi, and F. J. Fabozzi (2010), Computing VaR and AVaR in infinitely divisible distributions, *Probability and Mathematical Statistics,* 30 (2), 223-245.
51. Y. S. Kim, S. T. Rachev, D. M. Chung, and M. L. Bianchi (2009), The modified tempered stable distribution, GARCH models and option pricing, *Probability and Mathematical Statistics*, 29 (1), 91-117.
52. G. K. Mitov, S. T. Rachev, Y. S. Kim, and F. J. Fabozzi (2009), Barrier option pricing by branching processes, *International Journal of Theoretical & Applied Finance*, 12 (7), 1055-1073.
53. Y. S. Kim, S. T. Rachev, M. L. Bianchi, and F. J. Fabozzi (2008), Financial market models with Levy processes and time-varying volatility, *Journal of Banking & Finance*, 32 (7), 1363-1378.
54. Y. S. Kim and J. H. Lee (2007), The relative entropy in CGMY Processes and its applications to finance, *Mathematical Methods of Operations Research*, 66 (2), 327-338.

Working Papers

- J. Choi, Y. S. Kim, H. Kim (2022) Diversified Reward-Risk Parity in Portfolio Construction
- Y.S. Kim, H. Kim, J. Choi, (2022) Deep Calibration with Artificial Neural Network: A Performance Comparison on Option Pricing Models

Book

- S. T. Rachev, Y. S. Kim, M. L. Bianchi, and F. J. Fabozzi (2011), *Financial Models with Levy Processes and Volatility Clustering*, John Wiley & Sons

Chapters in Books

- M. L. Bianchi, S. T. Rachev, Y. S. Kim, and F. J. Fabozzi (2010), Tempered stable distributions and processes in finance: numerical analysis. In M. Corazza and C. Pizzi (Eds.), *Mathematical and Statistical Methods for Actuarial Sciences and Finance*, Springer.
- Y. S. Kim, S. T. Rachev, D. M. Chung, and M. L. Bianchi (2008), A modified tempered stable distribution with volatility clustering. In J. O. Soares, J. P. Pina, and M. Catalao-Lopes (Eds.), *New Developments in Financial Modelling*, Cambridge Scholars Publishing
- Y. S. Kim, S. T. Rachev, M. L. Bianchi, and F. J. Fabozzi (2007), A new tempered stable distribution and its application to finance. In Bol G., Rachev S. T., and Wuerth R., editors, *Risk Assessment: Decisions in Banking and Finance,* 51-84, Physika Verlag, Springer.

Patent

- System And Method For Estimating Portfolio Risk Using An Infinitely Divisible Distribution (US8301537 B1)

Original software for board public use

- R-Package, Tempered Stable Distribution, https://github.com/aaron9011/temStaR-v0.90

Presentations

1. “Deep Calibration with Artificial Neural Network: A Performance Comparison on Option Pricing Models”, Workshop: “Recent Trends in Machine Learning and Risk Management”, University of Florida, Reitz Union, Gainesville, FL (October 10, 2022)
2. “Multi-Asset Option Pricing Using Normal Tempered Stable Processes With Stochastic Correlation”, 65th Meeting Euro Working Group For Commodities And Financial Modelling, New York, NY (April 29, 2022)
3. “Portfolio Optimization and Marginal Contribution to Risk on Multivariate Normal Tempered Stable Model”, 65th Meeting Euro Working Group For Commodities And Financial Modelling, New York, NY (April 28, 2022)
4. “Tempered Stable Processes with Time-Varying Exponential Tails”, 4th KAFE-JAFEE International Symposium on Financial Engineering: Webinar1, Osaka, Sapporo, Tokyo (August 21, 2021)
5. Paris Financial Management Conference 2019, “Hetero-Leptokurtic Processes and Option Pricing with Time Varying Volatility of Volatility”, Paris, France (16 December 2019)
6. “Early Detecting Method for Financial Crisis”, Sookmyung University and NRF, Seoul, South Korea. (April 16, 2019).
7. “Stochastic Kurtosis in Financial Time Series”, Texas Tech University (October 9, 2018).
8. "Stochastic Covariance model, application to option pricing", International Conference on Mathematical Finance & Symposium on the Role of Mathematical Finance on FinTech Business, National Institute for Mathematical Sciences (NIMS) and National Research Foundation of Korea (NRF), Seoul, South Korea. (August 7, 2018).
9. Series Talks in Mathematical Finance (South Korea, 2018)
    a. “Stochastic Covariance on Lévy Process and Quanto Option Pricing”, Sookmyung University (April 24), Chungnam National University (July 26)
    b. “Normal Tempered Stable Firm Value Model”, Sookmyung University (April 26), Chungnam National University (July 27)
    c. “Fractional Lévy Process and Option Pricing”, Kwangwoon University (July 10), Sookmyung University (July 13), Kongju University (July 31)
    d. “Financial Risk”, Sookmyung University (July 16)
    e. “Time varying tail index model”, Sookmyung University (July 17)
    f. “Long Range Dependence in the Intraday Trading Data and Risk Neutral Market”, Sookmyung University (August 2)
    g. “Risk Management in High Frequency Trading”, Sookmyung University (August 3, 2018), Hannam University (July 30)
    h. “First Passage Time for Tempered Stable Process and Its Application to Derivatives Pricing”, Seoul National University (July 19), Kongju University (August 1)
    i. “Stochastic Kurtosis in Financial Time Series”, Hannam University (July 31)
10. "First Passage Time for Tempered Stable Process and Its Application to Derivatives Pricing,"

Financial Mathematics Seminar, Sookmyung University and NRF, Seoul, South Korea. (June 16, 2017).

11. "Long and Short Memory in the Risk-neutral Pricing Process," (Joint work with S. Stoyanov, and Jiang, D.), Computational Management Science 2017, University of Bergamo, Georgia Institute of Technology and CMS Journal, University of Bergamo, Bergamo, Italy. (May 30, 2017).
12. "Risk Management in High Frequency Trading," Zarb Analytics Initiatives III, Zarb Business School, Hofstra University, NY, United States. (March 31, 2017).
13. "The first hitting time of Levy process and its application to Barrier option pricing", Center for Finance Seminar Series, Stony Brook University (Sep 13, 2016)
14. "Fractional Lévy Process and Option Pricing " (Joint work with S. Stoyanov), Conference On Quantitative Methods For Financial Regulation, Stony Brook (Sep 10, 2016)
15. "Risk Management in High Frequency Trading", (joint work with Glimm, J. (Presenter), Stoyanov, S., Rachev, S., Lim, H.), Conference on Quantitative Method for Financial Regulation, Labex REFI and Stony Brook University, NYC and Stony Brook, NY, United States. (September 11, 2016).
16. "Fractional Lévy Process and Option Pricing " (Joint work with S. Stoyanov), Bachelier Finance Society, 9th World Congress, New York (July 18, 2016)
17. "Normal Tempered Stable Firm Value Model" (joint work with S. I. Kim), QF Seminar Series, Stony Brook University (April 19, 2016)
18. "Fractional Levy Process and Option Pricing" (joint work with S. Stoyanov), Center for Finance Seminar Series, Stony Brook University (March 11, 2016)
19. "Foster-Hart Risk and the Too-big-to-Fail Banks" (joint work with A. Anand, T. Li, and T. Kurosaki), International Conference on Game Theory, Stony Brook Center For Game Theory (July 20, 2015)
20. "Long-Range Dependence in the Risk-Neutral Measure for the Market on Lehman Brothers Collapse", ECares Brussels Belgium, Invited talk (March 19, 2015)
21. "Multivariate Fractional Levy Model with Time varying volatility", (joint work with J. Glimm, and S.T. Rachev), JSM 2014 in Boston- Risk Management in Financial Markets, Invited talk, (Aug 4, 2014)
22. "Multivariate Normal Tempered Stable Distribution", University of Bergamo (June 18, 2012)
23. "SUNY Korea Financial Engineering Seminar - Market Crashes and Modeling Volatile Markets", SUNY Korea (Jan. 12~ Jan. 14, 2012)
24. "Market Crashes and Modeling Volatile Markets", Sookmyung Women's University, Korea (Jan. 4, 2012)
25. "VAR And AVAR in Fat-Tailed Market Model", University Complutense de Madrid, Spain (Oct. 5, 2010)
26. "Market Crashes and Modeling Volatile Markets", KIAS, Korea (Aug. 3-5, 2010)
27. "Option Pricing with Regime-Switching Tempered Stable Processes", 34th Annual Conference of the German Classification Society, Karlsruhe (Jul. 21 -23, 2010)
28. "VAR And AVAR in Fat-Tailed Market Model", VIIIth International Summer School on "Risk

Measurement and Control", Rome (Jul. 5-9, 2010)

29. "Stable and Tempered Stable Distributions and Processes", ASMDA2009, Vilnius Lithuania (June 29 – July 3, 2009)
30. "Market Crashes and Modeling Volatile Markets", 11th Symposium on Finance, Banking, and Insurance, Universität Karlsruhe (TH), Germany (Dec. 17 - 19, 2008)
31. "Market Crashes and Modeling Volatile Markets", the International Summer School in Risk Measurement and Control 2008, Rome, Italy (Jul. 1, 2008), together with S. T. Rachev and Michele-Leonardo Bianchi.
32. "Option Valuation with a New Tempered Stable GARCH Model", the 41th Meeting of EURO Working Group on Financial Modelling, Lisboa, Portugal (Nov. 2007)
33. "A New Tempered Stable Distribution with Applications to Finance", the 40th Meeting of EURO Working Group on Financial Modelling, Rotterdam, The Netherlands (May. 2007)
34. "The Modified tempered Stable Distribution, GARCH-Models and Option Pricing", the 4th World Congress of the Bachelier Finance Society, Tokyo, Japan (Aug. 2006)
35. "The Modified Tempered Stable Processes with Application to Finance", Series lecture in Statistical Research Center for Complex System, Seoul National University, (Sep. 2005)

Teaching Experience

Stony Brook University

FIN 549 Risk Management (Fall 2022,2021,2020, 2019, 2018, Spring 2017, 2016, 2015, 2014)

FIN 580 Finance Research Practicum (Fall 2022,2021, Spring 2023, 2022, 2021, 2020, 2018, 2017)

FIN 540 Probability and Statistics for Finance (Fall 2017, 2016, 2014, 2013)

MBA 543 Business Analytics (Fall 2021, 2020, 2019, Spring 2020, 2019)

MBA 503 Data Analysis & Decision Making (Fall 2017, 2014, Spring 2015)

TMP 541 Managerial Economics (Spring 2017)

TMP 551 Data Analysis for Technology Managers (Spring 2023, 2022, 2021, 2020, 2019, 2018)

TMP 552 Management Science for Technology Managers 1 (Spring 2023, 2022, 2021, 2020, 2019, 2018)

TMP 553 Management Science for Technology Managers 2 (Spring 2023, 2022)

TMP 554 Data Mining for Technology Managers (Summer 2022)

TMP 560 Business Analytics for Technology Managers (Spring 2021, 2020)

BUS 220 Introduction to Decision Sciences (Spring 2019, Fall 2022)

BUS 215 Intro to Business Statistics (Spring 2016, Fall 2015, 2016)

BUS 365 Financial Management (Spring 2023, 2022, 2021)

Hofstra University

BAN 001 Introduction to Statistics (Spring 2017)

BAN 122 Intermediate Statistics (Fall 2017)

BAN 203 Advanced Quantitative Analysis for Managers (Fall 2022, 2021, Spring 2020)

BAN 230 Spreadsheet Modeling and Decision Making (Fall 2019)

BAN 275 Time Series Analysis of Financial Data (Spring 2018)

Karlsruhe Institute of Technology (KIT), Germany

- Credit Risk Management (Spring 2007, 2008, 2009, 2010, 2011, 2012)
- Operational Risk and Extreme Value Theory (Fall 2007/2008, 2008/2009, Spring 2010)
- Statistical Methods in Financial Risk Management (Fall 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013)
- Mathematical and Empirical Finance Seminar (2008-2012)
- Stochastic Calculus and Finance (Fall 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012, 2012/2013)
- Portfolio And Asset Liability Management (Spring 2009, 2010, 2011, 2012)

Hector School, KIT, Germany (together with S. T. Rachev)

- Stochastic Calculus and Mathematical Finance (Jan. 2008, Aug. 2009)
- Portfolio And Asset Liability Management (Jan. 2010, May. 2011)
- Credit Risk Management (Jan. 2010, May. 2011)
- Insurance, Risk Analysis (May. 2011)

Complutense University de Madrid (together with S. T. Rachev)

- Stochastic Calculus and Finance (Sep.27-Oct.8, 2010)

University of Bergamo (together with S. T. Rachev)

- Stochastic Calculus and Finance (Mar. 2009, Mar. 2010, Jun. 2011, Jun. 2012, Jun. 2013)
- Statistical Methods in Financial Risk Management (Mar. 2009, Mar. 2010, Jun. 2011, Jun. 2012, Jun. 2013)
- Credit Risk Management (Mar. 2009)

Ajou University, South Korea

- Financial market - Financial engineering and computation (Fall 2005)

Sogang University, South Korea

- Calculus (Fall 2004,Fall 2003)
- Applied mathematics - Stochastic models and simulations (Spring 2004, Spring 2005)

Supervisor for Ph.D student

Hyangju Kim – AMS, Stony Brook University (Jan. 18, 2021 – CitiBank)

Sung Ik Kim – AMS, Stony Brook University (May. 10, 2018 – Assi. Professor in LSU Shreveport)

Tiantian Li – AMS, Stony Brook University (Jul. 10, 2017 – Barclays)

Yijun Dong – AMS, Stony Brook University (December 14,2016)

Po-Keng Cheng – AMS, Stony Brook University (May 19, 2016)

Xiang Shi – AMS, Stony Brook University (May 6, 2016)

Hua Mo – AMS, Stony Brook University (Jan. 12, 2016)

Xiao Zhang – AMS, Stony Brook University (Aug. 12, 2015)

Co-supervisor for Ph.D Student

M. Bekri (2014) – Karlsruhe Institute of Technology, Germany

A. Beck (2012) – Karlsruhe Institute of Technology, Germany

C. Scherrer (2011) – Karlsruhe Institute of Technology, Germany

M. L. Bianchi (2008) – University of Bergamo, Italy (Bank of Italy)

Professional Activities

Jan. 2021 – Present, Associate Editor, Risks

Dec. 16, 2021 – Dec. 19, 2021, Session Chair, 2019 Paris Financial Management Conference

Sep. 2017 – Present, Specialty Chief Editor, Frontiers in Applied Mathematics and Statistics (Mathematical Finance)

Sep. 2014 – Aug. 2017, Associated Editor, Frontiers in Applied Mathematics and Statistics

Aug. 5, 2016 – Present, Reviewer, Journal Article, Studies in Nonlinear Dynamics & Econometrics.

Nov. 22, 2016 – Jun. 1, 2017, Committee Member, XIV CONFERENCE ON COMPUTATIONAL MANAGEMENT SCIENCE (CMS2017), Bergamo, Italy.

Session Chair, Pricing, Risk and Optimization in Management Science

Sep. 10, 2016 – Sep. 11, 2016, Scientific Committee, Conference on Quantitative Methods For Financial Regulation. Chair for session IV Market Modeling at 2pm-5pm Sep 11, 2016

Jan. 20, 2012, Member of the Board of Examiners for Ph.D Thesis, Faculty of Economics, University of Valencia, Spain.

Non-Teaching Work Experience

March 2012 – Present : Advisory Committee in JURo Instruments, Korea

June 2001 – December 2005: Advanced researcher in Fist Global Inc.

- Consulting : Pricing derivatives and risk management
  - Korea Housing Finance Corporation (2005), Shinyoung Securities (2004), National Agricultural Cooperative Federation Bank Korea (2003), Hankyung.com (2002), KOSCOM (2001)
- Research and development:
  - Develop numerical engine for pricing derivatives using High Performance Computing, with Tomas F. Coleman and CTC in Manhattan (2002)
  - Develop numerical engine for pricing derivatives

June 1997 – June 2000: Advanced developer in Yoong System Inc., Korea.

Computer Skill

- Certification : Microsoft™ Certified Professional (MCP ID# 1402232)
- Programming Language : expert in C++, C#, and Java
- Mathematical software : R, Matlab, Mathematica