JAKŠA CVITANIĆ
CURRICULUM VITAE

EDUCATION:

May 1992 Ph.D. in Statistics , Columbia University
Oct. 1991 M.Phil. in Statistics, Columbia University
June 1988 M.S. in Mathematics, University of Zagreb, Croatia
July 1985 B.S. in Mathematics, University of Zagreb, Croatia

EMPLOYMENT:

2005– present; Richard N. Merkin (since 2013) Professor of Mathematical Finance, Caltech
2012–2013; Professor of Finance, EDHEC Business School, Nice
2009 – 2015, Affiliated Programme Faculty, EDHEC-Risk Institute, Nice
1999– 2006; Professor of Mathematics and Economics, U. of Southern California
1992–1999; Assistant and Associate Prof., Dept of Statistics, Columbia University
1993–94; Postdoc, Institute of Mathematics and its Applications, U. of Minnesota

RESEARCH INTERESTS: dynamic contract theory; delegated portfolio management; asset pricing theory; financial derivatives; optimal portfolio choice; truth incentive mechanism design and proper scoring rules; mean-field games.

Ph.D STUDENTS (and their first jobs):

- Gennady Spivak (Goldman, Sachs & Co.), Columbia U., Statistics, 1998.
- Jay Blumenstein (J.P. Morgan), Statistics, Columbia U., 1999.
- David Rios (Credite Suisse First Boston), lColumbia U., Statistics, 2000.
- Wei-Chen Miao (co-advisor; National Central University, Taiwan), USC, Mathematics, 2004.
- Xuhu Wan (co-advisor; Hong Kong U. of Sc. and Techn. Business School), USC, Mathematics, 2005.
- Coskun Cetin (co-advisor; Whittier College), USC, Mathematics, 2005.
- Xudong Zeng (University of Missouri-Columbia), USC, Mathematics 2006.
- Agostino Capponi (Purdue University and Goldman-Sachs London), Caltech, Applied Math, 2009.
- Noah Myung (co-advisor; Naval Graduate School Monterey), Caltech, Social Sciences, 2009.
- Yaacov Kopeliovich, (University of Connecticut School of Business), "Essays on Volatility Technical Trading and Optimal Bond Portfolios", EDHEC Business School, 2015.
- Rodney Hoskinson (National Australia Bank), EDHEC Business School, 2016.
- Myungkoo Song (Korea Institute for Industrial Economics and Trade), Caltech, Social Sciences, 2017.
- Angad Singh (Balyasny Asset Management), Caltech, Mathematics, 2020.

EDITORIAL BOARDS:

Co-Editor: *Frontiers of Mathematical Finance*, 2021 – present; *Finance & Stochastics*, 2000 – present; *Mathematics and Financial Economics*; 2006 – 2020, Advisory Board 2021 – present; *Mathematical Finance*, 2013 – 2020.
Associate Editor: *Annals of Finance 2004 - 2017; Mathematical Finance 2002 - 2013, 2020 – present; SIAM Journal on Financial Mathematics 2008 – 2013; Asia-Pacific Fin. Markets, 1998 - 2002; Glasnik Matematicki 2002 - present; Annals of Applied Probability, 1998 -2003; Mathematics of Operations Research, 1999 –2002.*
Book Series Editorial Board: *Springer Briefs in Quantitative Finance 2011 – present.*

AWARDS AND DISTINCTIONS:

- American Statistical Association Scholastic Excellence Award, 1992.

- Member of the Council of the Bachelier Finance Society, 2003 – 2005.
- Vice-President, the Bachelier Finance Society, 2020 – .

1994-1995 NSF Grant DMS-93-19816, Co-PI, $58,000.
1995–1998 NSF Grant DMS-95-03582, PI, $75,000.
1995–1998 ARO Grant DAAH04-95-1-0528, Co-PI, $240,000.
1998–2001 NSF Grant DMS-97-32810, Co-PI, $225,000.
2001–2004 NSF Grant DMS 0099549, PI, $90,000.
2004–2007 NSF Grant DMS 04-03575, PI, $289,000.
2007–2009 NSF Grant DMS 06-31366, PI, $124,160.
2007-2008 NSF of Croatia Grant, PI, $90,000.
2010–2015 NSF Grant DMS 10-08219, PI, $333,000.
2018–2020 NSF Grant DMS-1810807, PI, $260,765.

BOOKS:

[1] J. CVITANIĆ and J. ZHANG (2012) *Contract Theory in Continuous Time Models*. Springer Finance.

[2] J. CVITANIĆ and F. ZAPATERO (2004) *Introduction to the Economics and Mathematics of Financial Markets*. The MIT Press, Cambridge, Massachusetts.

EDITED BOOKS AND SPECIAL ISSUES:

[1] *Handbooks in Mathematical Finance: Option Pricing, Interest Rates and Risk Management*. Eds. J. Cvitanić, E. Jouini and M. Musiela. Cambridge University Press, 2001.

[2] Special issue on Columbia-JAFEE conference on the Mathematics of Finance, Ed. J. Cvitanić. *Asia-Pacific Financial Markets*, **6**, 1999.

LECTURE NOTES AND BOOK CHAPTERS:

[1] J. CVITANIĆ (2001) *Theory of Portfolio Optimization in Markets with Frictions*. In *Handbooks in Mathematical Finance: Option Pricing, Interest Rates and Risk Management*. Eds. J. Cvitanić, E. Jouini and M. Musiela. Cambridge University Press.

[2] J. CVITANIĆ (1997) *Optimal Trading Under Constraints*. *Lecture Notes in Mathematics* 1656, Springer.

[3] J. CVITANIĆ (1997) *Nonlinear Financial Markets: Hedging and Portfolio Optimization*. In *Mathematics of Derivative Securities*, Dempster and Pliska Eds., *Proc. of the Isaac Newton Institute*, Cambridge University Press.

PUBLISHED REFEREED PAPERS:

E. BAYRAKTAR, J. CVITANIĆ and Y. ZHANG (2019). Large Tournament Games. *The Annals of Applied Probability* 29 3695–3744.

J. CVITANIĆ, D. PRELEC, S. RADAS, and H. ŠIKIĆ (2019) Incentive Compatible Surveys via Posterior Probabilities. *Theory of Probability and its Applications*. Forthcoming.

J. CVITANIĆ, D. PRELEC, B. RILEY and B. TEREICK (2019) Honesty via Choice-Matching. *American Economic Review: Insights*, 1, 179-192.

J. CVITANIĆ, D. PRELEC, S. RADAS, and H. ŠIKIĆ (2019) Game of Duels: Information-Theoretic Axiomatization of Scoring Rules. *IEEE Transactions on Information Theory*, 65, 530–537.

J. CVITANIĆ and H. XING (2018) Asset pricing under optimal contracts. *J. of Economic Theory*, 173, 142–180.

J. CVITANIĆ, D. POSSAMAI and N. TOUZI (2017) Dynamic Programming Approach to Principal-Agent Problems . *Finance and Stochastics* 22, 1–37.

J. CVITANIĆ, D. POSSAMAI and N. TOUZI (2017) Moral Hazard in Dynamic Risk Management. *Management Science* 63, 3328–3346.

J. CVITANIĆ and G. GEORGIADIS (2016) Achieving Efficiency in Dynamic Contribu-

tion Games. *American Economic Journal: Microeconomics* 8, 309–342.

J. CVITANIĆ, H. CHANG and X.Y. ZHOU (2015) Optimal Contracting with Moral Hazard and Behavioral Preferences. *J. of Mathematical Analysis and Applications* 428, 959–981 .

E. ASPAROUHOVA, P. BOSSAERTS, CORNELL, J. ČOPIĆ, J. CVITANIĆ and D. MELOSO (2015) Competition in Portfolio Management: Theory and Experiment. *Management Science* 61, 1868–1888.

J. CVITANIĆ, C. PLOTT and C.-Y. TSENG (2015) Price mean-reversion in markets with random lifetimes and reservation values. *Decisions in Economics and Finance* 38, 1-19.

J. CVITANIĆ, V. HENDERSON and A. LAZRAK (2014) On Managerial Risk-taking Incentives When Compensation May be Hedged Against. *Mathematics and Financial Economics* 8, 453–471.

J. CVITANIĆ and S. MALAMUD (2014) Nonmyopic Optimal Portfolios in Viable Markets. *Mathematics and Financial Economics* 8, 71–108.

J. CVITANIĆ, X. WAN & H. YANG (2013) Dynamics of Contract Design with Screening. *Management Science* 59, 1229–1244.

P. BREWER, J. CVITANIĆ & C. PLOTT (2013) Flash Crashes, Book Resting Times and Call Markets: A Simulation Study. *J. of Applied Economics* XVI, 223–252.

A. CAPPONI, J. CVITANIĆ & T. YOLCU (2012), A Variational Approach to Contracting under Imperfect Observations. *SIAM J. of Financial Mathematics* 3, 605–638.

A. CAPPONI, J. CVITANIĆ & T. YOLCU (2012), Optimal Contracting With Effort and Misvaluation. *Mathematics and Financial Economics* 7, 93–128.

J. CVITANIĆ, J. MA & J. ZHANG (2012) Laws of Large Numbers for Self-Inciting Correlated Defaults. *Stochastic Processes and Applications* 122, 2781-2810.

J. CVITANIĆ, E. JOUINI, S. MALAMUD and C. NAPP (2012) Financial Markets Equilibrium with Heterogeneous Agents. *Review of Finance*, **16** , 285–321.

J. CVITANIĆ & S. MALAMUD (2011) Price Impact and Portfolio Impact. *Journal of Financial Economics*, **100**, 201–225.

J. CVITANIĆ, S. RADAS & H. ŠIKIĆ (2011) Co-development Ventures: Optimal Time of Entry and Profit-Sharing. *J. of Economic Dynamics and Control* **35**, 1710–1730.

J. CVITANIĆ & S. MALAMUD (2010) Relative Extinction of Heterogeneous Agents. *The B.E. Journal of Theoretical Economics* **Vol 9** : Iss. 2 (Contributions), http://www.bepress.com/bejte/vol10/iss1/art4.

B. CORNELL, J. CVITANIĆ & L. GOUKASIAN (2010) Optimal investing with perceived mispricing. *Annals of Finance* **6**, 83 - .

J. CVITANIĆ, X. WAN & J. ZHANG (2009) Continuous-Time Principal-Agent Problems with Hidden Action and Lump-Sum Payment. *Applied Mathematics and Optimization* **59**, 99-146.

J. CVITANIĆ, X. WAN & J. ZHANG (2008) Principal-Agent Problems with Exit Options. *The B.E. J. in Theoretical Economics*, **8**, http://www.bepress.com/bejte/vol8/iss1/art23

A. CAPPONI and J. CVITANIĆ (2008) Credit Risk Modeling with Misreporting and Incomplete Information. *International J. of Theoretical and Applied Finance* 12, 81–112.

J. CVITANIĆ, A. LAZRAK, & T. WANG (2008) Sharpe ratio as a performance measure in a multi-period model. *J. of Econ. Dynamics and Control*, **32**, 1622–1649.

J. CVITANIĆ, Z. WIENER and F. ZAPATERO (2008) Analytic pricing of employee stock options. *Review of Financial Studies*, **21**. 683 - 724.

J. CVITANIĆ, V. POLIMENIS and F. ZAPATERO (2008) Optimal Portfolio Allocation with Higher Moments. *Annals of Finance*, **4**, 1–28.

J. CVITANIĆ, L. GOUKASIAN & F. ZAPATERO (2007) Optimal Risk Taking with Flexible Income. *Management Science*, **53**, 1594–1603.

J. CVITANIĆ & J. ZHANG (2007) Optimal Compensation with Adverse Selection and Dynamic Actions. *Mathematics and Financial Economics*, **1**, 21–55.

A. CADENILLAS, J. CVITANIĆ and F. ZAPATERO (2007) Optimal Risk-Sharing with Effort and Project Choice. *Journal of Economic Theory*, **133**, 403–440.

A. CADENILLAS, J. CVITANIĆ and F. ZAPATERO (2007) Stochastic Control methods for the problem of optimal compensation of executives. *Stochastic Differential Equations: Theory and Applications: A Volume in Honor of Professor Boris L. Rozovskii.* Edited by Peter H. Baxendale & Sergey V. Lototsky. World Scientific.

J. CVITANIĆ, B. ROZOVSKI & I. ZALIAPIN (2006) Numerical estimation of volatility values from discretely observed diffusion data. *The Journal of Computational Finance*, **4**.

J. CVITANIĆ, A. LAZRAK, L. MARTELLINI & F. ZAPATERO (2006), Dynamic Portfolio Choice with Parameter Uncertainty and the Economic Value of Analysts' Recommendations. LEAD ARTICLE, *Review of Financial Studies*, **19**, 1113-1156.

J. CVITANIĆ, X. WAN & J. ZHANG (2006) Optimal Contracts in Continuous-Time Models. *J. Applied Mathematics and Stochastic Analysis*, vol. 2006, Article ID 95203, 1–27.

J. CVITANIĆ, R. LIPTSER & B. ROZOVSKI (2006) Filtering approach to tracking volatility from prices observed at random times. *The Annals of Applied Probability*, **16**, 1633-1652.

J. CVITANIĆ & J. ZHANG (2005) The Steepest Descent Method for FBSDEs. *Electronic Journal of Probability*, **10**, 1468-1495.

A. CADENILLAS, J. CVITANIĆ and F. ZAPATERO (2004) Leverage decision and manager compensation with choice of effort and volatility. *Journal of Financial Economics*, **73**, 71-92.

J. CVITANIĆ, A. LAZRAK, L. MARTELLINI & F. ZAPATERO (2003) Optimal Allocation to Hedge Funds: An Empirical Analysis. *Quantitative Finance* **3**, 1-12.

J. CVITANIĆ, J. MA & J. ZHANG (2003). Efficient computation of hedging portfolios for options with discontinuous payoffs. *Mathematical Finance* **13**, 135-151.

J. CVITANIĆ, L. GOUKASIAN & F. ZAPATERO (2003) Monte Carlo computation of optimal portfolios in complete markets. *J. of Econ. Dynamics and Control.* **27**, 971-986.

J. CVITANIĆ, L. GOUKASIAN & F. ZAPATERO (2002). Hedging with Monte Carlo simulation. In E. Kontoghiorghes, B. Rustem and S. Siokos (eds.), *Computational Methods in Decision-Making, Economics and Finance.* Kluwer Academic Publishers. Dordrecht.

J. CVITANIC, A. LAZRAK, M.C. QUENEZ & F. ZAPATERO (2001) Incomplete information with recursive preferences. *Intern. J. of Theoretical and Appl. Finance* **4**, 245-261.

J. CVITANIĆ, W. SCHACHERMAYER & H. WANG (2001) Utility maximization in incomplete markets with random endowment. *Finance & Stochastics* **5**, 259-272.

J. CVITANIĆ & H. WANG (2001) On optimal terminal wealth under transaction costs. *J. of Mathematical Economics* **35**, 223-232.

J. CVITANIĆ & I. KARATZAS (2001) Generalized Neyman-Pearson Lemma via convex duality. *Bernoulli* **7**, 79-97.

MA, J. & J. CVITANIĆ (2001) Reflected forward-backward SDE's and obstacle problems with boundary conditions. *Journal of Appl. Math. & Stoch. Anal.* **14**, 113-138.

J. CVITANIĆ (2000) Minimizing expected loss of hedging in incomplete and constrained markets. *SIAM J. Control & Optimization*, **38**.

J. CVITANIĆ (1999) Methods of partial hedging. *Asia-Pacific Fin. Markets* **6**, 7-35.

G. SPIVAK & J. CVITANIĆ (1999) Maximizing the probability of perfect hedge. *The Annals of Applied Probability* **9**, 1303-1328.

J. CVITANIĆ & I. KARATZAS (1999) On dynamic measures of risk. *Finance & Stochastics* **4**, 451-482.

J. CVITANIĆ, I. KARATZAS & H.M. SONER (1999) Backward SDEs with constraints on the gains-process. *Annals of Probability* **26**, 1522-1551.

J. CVITANIĆ, H. PHAM & N. TOUZI (1999) Super-replication in stochastic volatility models under portfolio constraints. *J. of Applied Probability* **36**, 523-245.

J. CVITANIĆ, H. PHAM & N. TOUZI (1998) A closed form solution to the problem of super-replication under transaction costs. *Finance & Stochastics* **3**, 35-54.

M. BROADIE, J. CVITANIĆ & M. SONER (1998) Optimal replication of contingent claims under portfolio constraints. *Rev. of Financial Studies* **11**, 59-79.

D. CUOCO & J. CVITANIĆ (1998) Optimal consumption choices for a large investor. *J. Econ. Dynamics and Control* **22**, 401-436.

J. CVITANIĆ & I. KARATZAS (1996) Backward SDE's with reflection and Dynkin games. *Annals of Probability* **24**, 2024-2056.

J. CVITANIĆ & I. KARATZAS (1996) Hedging and portfolio optimiz. under transaction costs: martingale approach. *Math. Finance* **6**, 133-165.

J. CVITANIĆ & J. MA (1996) Hedging options for a large investor and Forward-Backward SDE's. *Annals of Applied Probability* **6**, 370-398.

M. SONER, S. SHREVE & J. CVITANIĆ (1995) There is no nontrivial hedging portfolio for option pricing with transaction costs. *Annals of Applied Probability* **5**, 327-355.

J. CVITANIĆ & I. KARATZAS (1995) On portfolio optimization under drawdown constraints. *IMA Volumes in Math. and its Appl.* **65**, 35-46.

J. CVITANIĆ & I. KARATZAS (1995) Contingent claim valuation and hedging with constr. portfolios. *IMA Volumes in Math. & Appl.* **65**,13-34.

J. CVITANIĆ & I. KARATZAS (1993) Hedging contingent claims with constrained portfolios. *Annals of Applied Probability* **3**, 652-681.

J. CVITANIĆ & I. KARATZAS (1992) Convex duality in constrained portfolio optimization. *Annals of Applied Probability* **2**, 767-818.

PAPERS IN REVISION, SUBMITTED PAPERS, WORKING PAPERS AND WORK IN PROGRESS:

B. ACCIAIO, R. CROWELL and J. CVITANIĆ (2021) Revisiting Persistent Private Information. Working paper.

J. CVITANIĆ, S. KOU, X. WAN and K. WILLIAMS (2021) Pi Portfolio Management: Reaching Goals while Avoiding Drawdowns. Submitted.

J. CVITANIĆ and J. HUGONNIER (2021) Optimal Fund Menus. R&R in *Mathematical Finance*.

J. CVITANIĆ and J. ZHANG (2020) Games of Costly Persuasion. Work in Progress.

J. CVITANIĆ, L. GOUKASIAN, & F. ZAPATERO (2015), CFO compensation, Hedging Interest Rate Risk and Capital Structure. Working paper.

A. CADENILLAS, J. CVITANIĆ and F. ZAPATERO (2012) Executive Stock Options as a Screening Mechanism. Working paper.

J. CVITANIĆ and A. KIRILENKO (2010) High-frequency trading and asset prices. Working paper.

INVITED CONFERENCE TALKS AND SUMMER SCHOOLS:

- 1. Invited speaker, *Workshop on Financial Mathematics*, Institute Henri Poincare, Paris, France, January 1992.
- 2. Invited speaker, *Math. Finance Wkshp*, IMA, Minneapolis, June '93.
- 3. Invited speaker, *IMS Eastern Regional Conf.*, Cleveland, April '94.
- 4. Invited speaker, *Bank of England Conference - Mathematics of Finance: Models, Theory and Computation*, The Newton Institute of Mathematical Sciences, University of Cambridge, May 1995.
- 5. Invited speaker, *CIRANO-CRM Conference on Mathematical Finance*, Université de Montréal, May 1996.
- 6. Lecturer, *Centro Internazionale Matematico Estivo 1996 Summer School on Financial Mathematics*, Bressanone, Italy, July 1996.
- 7. Invited speaker, *Quantitative Methods in Finance*, Australia 1997.
- 8. Lecturer, Mini-course on Financial Mathematics, Berliner Graduiertenkolleg "Stochastische Prozesses und Probabilistische Analysis", Technische Universität Berlin, Berlin, Ger-

many, July 1998.
- 9. Invited speaker, *International conference on Mathematical Finance*, Hammamet, Tunisia, June 1999.
- 10. Lecturer, Mini-course on Financial Mathematics, Université Paris I, June 1999.
- 11. Invited Speaker, *Southern California Probability Symposium*, USC, Fall 1999.
- 12. Invited Speaker, Mathematical Congress, Zagreb, June 2000.
- 13. Lecturer, Mini-course on Financial Mathematics, Johannesburg, South Africa, July 2000.
- 14. Invited Speaker, Mathematical Finance Day, Boston University, September 2000.
- 15. Invited Speaker, Columbia-JAFEE conference on Mathematical Finance, Tokyo, December 2000.
- 16. Invited speaker, Workshop on Applications of Malliavin Calculus to Finance. INRIA Rocquencourt, France. December 2001.
- 17. Invited Speaker, So. California Probability Symposium, Irvine, CA, Nov 2001.
- 18. Invited Speaker, Conference on "Incomplete Financial Markets", Carnegie Mellon University, May 2002.
- 19. Invited Speaker, CAP Workshop on Derivative Securities and Risk Management, Columbia University, Nov 2002.
- 20. Plenary Speaker, Quantitative Methods in Finance, Cairns/Sydney, Australia, Dec 2002.
- 21. Invited Speaker, Mini-Workshop on Mathematical Finance, Purdue University, May 2003.
- 22. Invited Speaker, AMS Midwest Meeting, session on "Stochastic Analysis and Applications", May 2003, Indiana University.
-23. Plenary Speaker, Croatian Congress of Mathematics, June 2004, Split, Croatia.
- 24. Invited Speaker, Bachelier Finance Society Third World Congress, Chicago, July 2004.
- 25. Invited Speaker, Newton Institute Programme on "Developments in Quantitative Finance: Workshop on Monte Carlo methods", Cambridge University, May 2005.
- 26. Plenary Speaker, Stanford-Tsukuba Joint Workshop on Financial Engineering and Systems Management, Stanford University, March 2006.
- 27. Lecturer, a one-day course on "Optimal Contracts in Continuous Time", Kyoto, September 2006.
- 28. Plenary Speaker, Daiwa Workshop on Financial Engineering, Tokyo, September 2006.
- 29. Lecturer, intensive course on options, EDHEC, Nice, November 2006.
- 30. Lecturer, three-day intensive course on financial derivatives for managers, Kolocep, Croatia, 2007.
- 31. Plenary Speaker, Conference on portfolio management for pension funds, Split, Croatia, November 2007.
- 32. Invited Speaker, Workshop on Stochastic Analysis in Finance and Insurance, Oberwolfach, Germany, January 2008.
- 33. Plenary Speaker, Bachelier Finance Society Fifth World Congress, London, July 2008.
- 34. Invited Speaker, 2nd Western Conference on Mathematical Finance, U. of Texas at Austin, Nov 2008.
- 35. Invited Speaker, Midwest Finance Association, Las Vegas, February 2010
- 36. Invited Speaker, Eastern Finance Association, Miami Beach, April 2010.
- 37. Invited Speaker, CEPR Gerzensee Asset Pricing Meetings, July 2010 .
- 38. Invited Speaker, Oxford Mann Institute Workshop on "New Directions in Quantitative Finance", Oxford University, July 2010.
- 39. Invited Speaker, European Finance Association Conference, Frankfurt, August 2010.
- 40. Invited Speaker, SIAM Conference on Financial Mathematics and Engineering, San Francisco, November 2010.
- 41. Invited Speaker, Conference on Financial Mathematics, Mathematic Institute, Oberwolfach, February 2011.

- 42. Plenary Speaker, Conference on Stochastic Analysis in Finance and Insurance, U. of Michigan, May 2011.
- 43. Plenary Speaker, International Conference on Mathematical Finance and Economics, Istanbul, July 2011.
- 44. Invited Speaker, CEPR Gerzensee Asset Pricing Meetings, July 2011 .
- 45. Lecturer, School on Mathematical Methods in Finance and Economics, Do Son, Vietnam, October 2011.
- 46. Invited Speaker, 7th Bachelier Colloquium in Mathematical Finance and Stochastic Calculus, Metabief, France, January 2013.
- 47. Invited Speaker, Conference on Mathematical Economics in Honor of Professor Rose-Anne Dana, U. Daphine, Paris, February 2013.
- 48. Invited Speaker, Natixis Foundation Workshop on Quantitative Finance, Pierre and Marie Curie University Jussieu, Paris, April 2013
- 49. Invited Speaker, French Finance Association conference, Lyon, May 2013.
- 50. Plenary Speaker, Frontiers in Financial Mathematics, Dublin, June 2013.
- 51. Invited Speaker, Southwest Economic Theory Conference, UC Irvine, March 2014.
- 52. Invited Speaker, Risk and Stochastics Conference, London School of Economics, April 2014.
- 53. Invited Speaker,Stochastic Analysis in Finance and Insurance, Oberwolfach, May 2014.
- 54. Invited Speaker, Mathematical Finance: Arbitrage and Portfolio Optimization, BIRS, Banff, May 2014.
- 56. Invited Speaker, 13th Conference on Research on Economic Theory & Econometrics, Milos, Greece, July 2014.
- 57. Invited Speaker, Analyse stochastique pour la modélisation des risques, CIRM, Marseille, September 2014.
- 58. Plenary Speaker, 5th SIAM Conference on Financial Mathematics & Engineering, Chicago, November 2014.
- 59. Invited Speaker, Optimization meets general equilibrium theory, dynamic contracting and finance, University of Chile, Santiago, December 2014.
- 60. Invited Speaker, Mathematics and Financial Economics, Center for Interdisciplinary Research, Bielefeld, May 2015.
- 61. Invited Speaker, Methods of Mathematical Finance, in honor of Steve Shreve's 65th birthday, Pittsburgh, June 2015.
- 62. Invited Speaker, Culminating Workshop in Financial Mathematics, UCLA's Lake Arrowhead Conference Center, 2015.
- 63. Invited Speaker, 14th Conference on Research on Economic Theory & Econometrics, Crete, Greece, July 2015.
- 64. Invited Speaker, Western Conference in Mathematical Finance, Austin, October 2015.
- 65. Plenary Speaker, Quantitative Mathematical Finance Conference, Sydney, December 2015.
- 66. Lecturer, a 16hr course "Mathematical Methods of Contract Theory", Department of Statistics, LSE, January-March 2016.
- 67. Invited Participant, Stochastic Analysis and Mathematical Finance - A Fruitful Partnership, Oaxaca, May 2016.
- 68. Plenary Speaker, Byrne Workshop on Stochastic Analysis in Finance and Insurance, University of Michigan, June 2016.
- 69. Plenary Speaker, 8th Western Conference in Mathematical Finance, University of Washington, March 2017.
- 70. Plenary Speaker, Mathematical Finance, Probability, and Partial Differential Equations Conference, Rutgers University, May 2017.
- 71. Plenary Speaker, Thera Stochastics: A Mathematics Conference in Honor of Ioannis Karatzas, Santorini, May 2017.
- 72. Invited Speaker, Advances in Stochastic Analysis for Risk Modeling, CIMR, Marseille,

Nov 2017.
-73. Invited Speaker. Quantitative Methods in Finance, Sydney, Dec 2017.
-74. Invited Speaker. Workshop on Stochastic Analysis applied to economics, finance and insurance. Santiago de Chile, March 2018.
-75. Plenary Speaker. Conference on Financial and Economic Applications. Institute for Mathematics and its Applications, U of Minnesota, June 2018.
-76. Invited Speaker. Innovative Research in Mathematical Finance, CIRM, Marseilles, September 2018.
-77. Invited Speaker. The 13th International Conference "Challenges of Europe", May 2019, Split, Croatia.
- 78. Invited Speaker. Analysis, Probability, and Applications. Zagreb, Croatia, June 2019
-79. Invited Speaker. The Third International Congress on Actuarial Science and Quantitative Finance. Manizales, Colombia, June 2019.

CONFERENCE ORGANIZER:

- 1. Co-organizer, *Workshop in Honor of Prof. Y.S. Chow*, Columbia University, New York, April 1993.
- 2. Co-organizer, annual *Workshop on Mathematical Finance* , Columbia University, New York, Nov '94, Oct '95 and '96, Apr '98 and '99.
- 3. Organizing Committee, Conference on Nonlinear Analysis, NYU, May 2000.
- 4. Co-organizer, Conference on "Financ. Mathematics: Risk Management, Modeling and Numerical Methods", Institute for Pure and Appl. Math., Los Angeles, January 2001.
- 5. Organizing committee, Summer School in Mathematical Finance, Dubrovnik, Croatia, September 2001.
- 6. Co-organizer, Workshop on "New Directions in Financial Modeling", USC, April 2002.
- 7. Co-organizer: "Numerical Probabilistic Methods for High-Dimensional Problems in Finance", AIM, Palo Alto, December 2003.
- 8. Co-organizer: A session on "Financial Mathematics", AMS West Meeting, April 2004.
- 9. Co-organizer: Programme on "Optimization Problems in Financial Economics", Banff International Research Station, Banff, Canada, May 2006.
- 10. Co-organizer: "1st Croatian Quants Day", Zagreb, Croatia, February 2008.
- 11. Scientific committee: "Conference on Numerical Methods in Finance", 15-17 April 2009 at Ecole des Ponts ParisTech.
- 12. Scientific committee: Workshop on "New Directions in Financial Mathematics", IPAM, UCLA, Jan 2010.
- 13. Organizing committee: "Workshop on Foundations of Mathematical Finance", the Fields Institute, Toronto, Jan 11-15, 2010.
- 14. Co-organizer: "Fourth Western Conference on Mathematical Finance" and "International Colloquium on Backward Stochastic Differential Equations", USC, Los Angeles, June 2011.
- 15. Co-organizer: "Probability, Control and Finance – a Conference in Honor of Ioannis Karatzas", Columbia University, New York City, June 2012.

ADMINISTRATIVE ACTIVITIES:

- 2020 –, Vice-President, the Bachelier Finance Society.
- 2019 –2020 Academic and Co-Curricular Support Working Group for Caltech accreditation by the Western Association of Schools and Colleges.
- 2015/2016 – present, Director of The Linde Institute of Economic and Management Sciences
- 2005 – present, representative for Business and Economics Management major, Caltech.
- 2014 – 2016, Freshmen Admissions Committee, Caltech.
- 2014, Member of the Division Chair Search Committee, Caltech.
- 2014-15, 2006-07, Chair of the Search Committee for Business and Econ. Management, Caltech.
- 2014-15, 2008-09, 2006-07, HSS Students/Faculty Committee on Undergraduate Curriculum, Caltech.
- 2003 – 2005, Personnel Committee, USC College
- 2002 – 2005, USC, Associate Chair of the Department of Mathematics and Head of the Computational Mathematics and Statistics Section.
- 1999 – 2005, Co-Director of the Master's of Science Program in Math. Finance, USC.
- 2002, Member of the Merit/Promotion Committee, Dept. of Math, USC.
- 2002–03, Chair of the Committee for Restructuring the Graduate Program, Dept. of Mathematics, USC
- 2001 – 2005, Academic Advisor for the joint Econ/Math major at USC.
- 2001–02, Member of the Internal Review Committee for the Department of Finance and Business Economics at USC.
- 2001, Chair of the Committee for Future Structure of Department of Mathematics, USC
- 2001, Chair of the Hiring Committee for the CMS section, Dept of Mathematics, USC
- 1997–1999, Co-Director of the Master's Program in Math. Finance, Columbia University.
- 1998–99, Member of Columbia Univ. Executive Committee of Arts and Sciences Faculty.
- 1994–98, Dept of Statistics representative for undergraduates, Columbia U.

ADVISING Ph.D. STUDENTS, SERVING ON COMMITTEES:

- A member of dissertation defense committees for:

1. Caltech: Zijian Tao (Mathematics, Chair), Angad Singh (Mathematics, Chair), Myungkoo Song (Social Sciences, Chair), Pengfei Sui (Social Sciences), Tatiana Mayskaya (Social Sciences), Matthew Kovach (Social Sciences), Hamed Hamze Bajgiran (Social Sciences), Thomas Ruchti (Social Sciences), Yonathan Schwarzkopf (Physics), Agostino Capponi (Computing and Math Sciences, Chair), Noah Myung (Social Sciences, Co-Chair), Michael Alton (Social Sciences), Guido Maretto (Social Sciences), Ramon Van Handel (Physics).

2. EDHEC Business School: Yaacov Kopeliovich (chair), Rodney Hoskinson, (co-chair), Kaipichit Ruengsrichaiya.

3. USC: Co-advisor for Wei-Chen Miao, Xuhu Wan, Coskun Cetin and Xudong Zeng. On the committee for Pawel Szerszen (Economics), Shin-Huei Wang (Economics), Yuri Marynets (Economics), Jose Villalobos (Mathematics), Alexander Lytvak (Mathematics), Dmitri Kantsyrov (Economics). In the past, 3 other students in Finance, 1 in Mathematics, 3 in Engineering, 2 in Economics.

4. Columbia University: Advisor for Gennady Spivak, Jay Blumenstein, and David Rios; On the committee of 6 other students in Statistics, 3 in Operations Research, 3 in Finance, 1 in Economics;

5. Other institutions: Thibaut Mastrolia (Habilitation in Mathematics, Ecole Polytechnique, Paris, 2021), Bruno Bouchard (Mathematics, U. Paris VI, 199?), Christoph Frei (ETH Zurich, Mathematics, 2009), Markus Severin Mocha (Humboldt-Universitat zu Berlin, 2011), Uwe Wystup (Carnegie Melon U., Mathematics, 200?).

COURSES AND DEGREES INITIATED AND DEVELOPED:

- *Mathematical Models in Fintech*, undergraduate course, Caltech 2018/19 – present.
- *Pricing Options with Mathematical Models*, an onlline, MOOC version of BEM 105 "Options", Caltech/EdX, 2016 – present.
- *Applied Game Theory*, M.S. in Corporate Finance course, EDHEC Busines School 2012 –2013
- *Equilibrium Models in Financial Economics, Ph.D course, Caltech 2010-11*
- *Continuous-time Financial Economics*, Ph.D course, EDHEC Business School, 2009 – 2014
- *Fixed Income and Credit Risk Derivatives*, undergraduate course, Caltech 2007 –
- *Mathematical Finance*, Ph.D course, Caltech, 2006 –.
- *Optimal Contracts*, Ph.D course, Caltech, 2006-07.
- *Stochastic Calculus for Finance*, graduate course, Dept. of Statistics, Columbia University 1996 - 1999, Dept. of Mathematics, USC 1999 – 2005.
- *Financial Markets*, undergraduate course, Department of Economics, USC, 2001-2005.
- M.S. in Mathematical Finance (co-developer) Columbia University, 1997 – 1999.
- Joint Economics-Mathematics B.S. degree (co-developer), USC 2002.
- M.S. in Mathematical Finance (co-developer), USC.
- B.A. and B.S. in Applied and Computational Mathematics (co-developer) USC.

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