UMUT ÇETİN

Curriculum Vitae

London School of Economic and Political Science
Department of Statistics
Columbia House
Houghton Street
London WC2A 2AE

Phone: +44 (0)20 7955 7644
Fax: +44 (0)20 7955 7416
e-mail: u.cetin@lse.ac.uk
web: http://stats.lse.ac.uk/cetin/

Education

- Cornell University, Ithaca, NY
  Ph.D. in Applied Mathematics, August 2003.
  Advisors: Robert A. Jarrow, Philip Protter, Leonard Gross and Tapan Mitra.
  Minors: Microeconomics, Probability Theory
- Cornell University, Ithaca, NY
  M.S. in Applied Mathematics, December 2001.
- Koç University, Istanbul, Turkey
  B.S. in Mathematics, June 1998.

Academic Experience

- London School of Economics
  Department of Statistics — September 2017 – present
  Professor in Statistics.
- London School of Economics
  Department of Statistics — August 2010 – September 2017
  Associate Professor in Statistics.
- London School of Economics
  Department of Statistics — 2004 – August 2010
  Assistant Professor in Statistics.
- Vienna University of Technology
  Department of Financial and Actuarial Mathematics — 2003 – 2004
  Postdoctoral researcher.

External Examining Experience

- External Examiner for MSc Financial Economics at City University, London.
  October 2013 - July 2018

Departmental Duties Undertaken

- Actuarial Science Deputy Course Tutor.
- Member of the Departmental Teaching Committee (ongoing).
- Director of the Departmental Teaching Committee.
- MSc Risk and Stochastics Programme Director.
- Member of the Steering Committee, The London Graduate School of Mathematical Finance (ongoing).
- Co-director of BSc Financial Mathematics and Statistics (ongoing).
- Organiser of Joint Risk and Stochastics and Financial Mathematics Seminar (ongoing).
- Organiser of London Mathematical Finance Seminar (ongoing).

- Organiser of Joint Econometrics and Statistics Workshop.
- Departmental representative for Undergraduate Studies Sub-committee.
- Departmental representative for Graduate Studies Sub-committee.
- Institute for Actuaries University Liaison Committee.

Research Interests

Stochastic calculus, theory of martingales and Markov processes. Stochastic filtering theory. Applications to mathematical finance. Market microstructure. Mathematics of climate change.

Publications

- **Modeling Credit Risk with Partial Information** with Robert A. Jarrow, Philip Protter and Yıldıray Yıldırım, 2004. *The Annals of Applied Probability* 14(3), 1167–1178.
- **Liquidity Risk and Arbitrage Pricing Theory** with Robert A. Jarrow and Philip Protter, 2004. *Finance and Stochastics*, 8, 311–341.
- **Pricing Options in an Extended Black-Scholes Economy with Liquidity: Theory and Empirical Evidence** with Robert A. Jarrow, Philip Protter and Mitchell Warachka, 2006. *The Review of Financial Studies*, 19(2), 493–529.
- **Modelling liquidity effects in discrete time** with L. C. G. Rogers, 2007. *Mathematical Finance*, 17(1), 15–29.
- **Insider trading in an equilibrium model with default: a passage from reduced-form to structural modelling** with Luciano Campi, 2007. *Finance and Stochastics*, 11(4), pp. 591–602. **(Best Paper in Mathematical Finance in 2008 by Europlace Institute of Finance)**
- **Hedging under incomplete information: Applications to emissions markets** with Michel Verschuere, 2007. *Proceedings of the 5th Actuarial and Financial Mathematics Day, Brussels (2007)*, edited by G. Deelstra, A. De Schepper, J. Dhaene, H. Reynaerts, W. Schoutens, P. Van Goethem and M. Vanmaele.
- **Pricing and hedging in carbon emissions markets** with M. Verschuere, 2010. *International Journal of Theoretical and Applied Finance,* 12(7), pp. 949–967.
- **Option hedging for small investors under liquidity costs** with M. Soner and N. Touzi, 2010. *Finance and Stochastics,* 14(3), pp. 317–341.
- **Stochastic Integration**, 2010. To appear in *Encyclopedia of Quantitative Finance*, Wiley.
- **Liquidity Risk and Arbitrage Pricing Theory** with R. Jarrow and P. Protter, 2008. To appear in *Handbook of Quantitative Finance and Risk Management*, Springer-Verlag.
- **Dynamic Markov bridges motivated by the models of insider trading** with L. Campi and A. Danilova, 2011. *Stoc. Proc. App.*, 121, 534–567.
- **On absolutely continuous compensators and nonlinear filtering equations in default risk models**, 2012. *Stoc. Proc. App.*, 122 (11). pp. 3619–3647.
- **An equilibrium model with default and insider's dynamic information** with L. Campi and A. Danilova, 2012. *Finance and Stochastics*, 17(3), pp. 565-585..
- **Filtered Azema Martingales**, 2012. *Electron. Commun. Probab.*, vol. 7, no. 62, pp. 1-13.
- **Point process bridges and weak convergence of insider trading models** with H. Xing, 2013. *Electron. J. Probab.*, vol. 18, no. 26, pp.1-24.
- **Explicit construction of a dynamic Bessel bridge of dimension 3** with L. Campi and A. Danilova, 2013 . *Electron. J. Probab.*, vol. 18, no. 30, pp.1-25.
- **Bayesian sequential estimation of a drift of fractional Brownian motion** with A. Novikov and A. Shiryaev, 2013. *Sequential Analysis*, 32(3), pp. 288-296.
- **A simple model for market booms and crashes** with I. Sheynzon, 2014. *Mathematics and Financial Economics*, 8(3), pp. 291-319.
- **On certain integral functionals of squared Bessel processes**, 2015. *Stochastics*, 87(6), pp. 1033-1060.

- **Markov bridges: SDE representation** with A. Danilova, 2016. *Stoc. Proc. App.*, 126(3), pp. 651-679.
- **Markovian Nash equilibrium in financial markets with asymmetric information and related forward-backward systems** with A. Danilova, 2016. *Ann. App. Prob.*, 26(4), pp. 1996-2029.
- **Financial equilibrium with asymmetric information and random horizon**, 2017. *Finance and Stochastics*, 22(1), pp. 97-126.
- **Path transformations for local times of one-dimensional diffusions**, 2018. *Stoc. Proc. App.*, 128(10), 3439-3465.
- **Diffusion transformations, Black-Scholes equation and optimal stopping**, 2018. *Ann. App. Prob.*, 28(5), 3102-3151.

Submitted works

- **Linear inverse problems for Markov processes and their regularisation**.
- **Integral representation of subharmonic functions and optimal stopping with random discounting**.

Books

- **Dynamic Markov Bridges and Market Microstructure: Theory and Applications**, with A. Danilova, to appear in *Probability Theory and Stochastic Modelling*, Springer.

Professional Activities

- Referee for *Mathematical Finance, Annals of Operations Research, Applied Mathematical Finance, Journal of Economic Dynamics and Control, Stochastics and Stochastics Reports, Finance & Stochastics, Quantitative Finance, Applied Mathematics and Optimization, The Review of Financial Studies, Journal of Futures Markets, Decisions in Economics and Finance, SIAM Review, Mathematics and Financial Economics, Stochastic Processes and their Applications, Management Science, SIAM Journal on Financial Mathematics, SIAM Journal on Control and Optimization, Econometrica, Annals of Finance, Annals of Applied Probability, Electronic Journal of Probability, Market Microstructure and Liquidity.*

Academic Visits

- Department of Mathematics, Rutgers University. Invitation by Prof. Kasper Larsen. April 2018
- Department of Mathematics, Carnegie Mellon University. Invitation by Prof. Dmitry Kramkov. April 2017
- Department of Mathematics, University of Michigan. Invitation by Prof. Erhan Bayraktar. March 2017
- Department of Mathematics, University of Texas at Austin. Invitation by Prof. Gordan Zitkovic. February 2017
- Department of Mathematics, Carnegie Mellon University. Invitation by Prof. Kasper Larsen. March 2015
- Department of Mathematics, ETH Zurich. Invitation by Prof. Mete Soner. January–June 2011
- CMAP, École Polytechnique, Paris. Invitation by Prof. Nizar Touzi. 2008–2009
- Department of Mathematics. Université d'Evry. Invitation by Prof. Monique Jeanblanc. September 2008

- Department of Mathematics. Facultatea de Cibernetica, Statistica si Informatica Economica Academia de Studii Economice Bucuresti, Bucharest. Invitation by Dr. Bogdan Iftimie. December 2007
- CMAP, École Polytechnique, Paris. Invitation by Prof. Nizar Touzi. 2007–2008
- Department of Administrative Sciences and Economics. Koç University, Istanbul. Invitation by Prof. Mete Soner. March 2006
- Institut für Finanz- und Versicherungsmathematik. Technische Universität Wien, Vienna. Invitation by Prof. Josef Teichmann. March 2006
- Institut für Finanz- und Versicherungsmathematik. Technische Universität Wien, Vienna. Invitation by Prof. Josef Teichmann. September 2005
- Statistical Laboratory. University of Cambridge. Invitation by Prof. Chris Rogers. November 2003

Plenary Conference Talks

- Stochastic Optimization and Optimal Stopping, Steklov Institute. September 2012
- The 4th General Conference on Advanced Mathematical Methods in Finance, Alesund. May 2009

Invited Conference Talks

- Stochastic Analysis and its Applications, Oaxaca, Mexico. May 2018
- Princeton-Rutgers Mathematical Finance Day. April 2018
- Market Microstructure: Confronting Many Viewpoints, Paris. December 2016
- London-Paris Bachelier Workshop, Paris. September 2016
- Enlargement of Filtrations and Financial Applications, Zurich. September 2016
- Stochastic Analysis and Mathematical Finance - A Fruitful Partnership, Oaxaca, Mexico. May 2016
- Enlargement of Filtrations and Financial Applications, Paris. May 2016
- Market Microstructure 2015, CFM-Imperial Workshop, Deutsche Bank, London. December 2015
- Mathematics and Financial Economics, Center for Interdisciplinary Research, University of Bielefeld. May 2015
- Kyle-Back Models, Thematic Semester on Finance and Insurance, Paris. April 2015

- Stochastic Analysis for Risk Modelling, Luminy. September 2014
- Labex Louis Bachelier - SIAM-SMAI Conference on Financial Mathematics: Advanced Modeling and Numerical Methods, Paris. June 2014
- Mathematical Finance: Arbitrage and Portfolio Optimization, Banf. May 2014
- Oberwolfach Workshop on Stochastic Analysis in Finance and Insurance. May 2014
- 7th International Conference on Computational and Financial Econometrics. December 2013
- Risk Management and Financial Markets, Toulouse School of Economics. September 2012
- Liquidity and Credit Risk, University of Freiburg. March 2012
- Workshop on Interest Rates and Credit Risk, Technical University of Chemnitz. November 2011
- The New Commodity Markets, Oxford Man-Institute. June 2011
- Fields Institute Workshop on Financial Derivatives and Risk Management, Toronto. May 2010
- New Directions in Financial Mathematics. Institute for Pure and Applied Mathematics, Los Angeles. January 2009
- Workshop on the Pricing and Hedging of Environmental and Energy-related Financial Derivatives, National University of Sinagapore. December 2009
- Workshop on Incomplete Information and Nonlinear Filtering in Mathematical Finance. Technical University of Chemnitz. June 2009
- Summer school on *Perceiving, measuring and managing risk: illiquidity, long-term risk, natural resources.* University of British Columbia, Vancouver. July 2008
- International Workshop: Credit Risk. Université d'Evry. June 2008
- Workshop on New Directions in Quantitative Finance, Paris. May 2008
- International Conference on Mathematical Finance and Related Topics, Kanazawa. August 2006
- INFORMS 2002 Annual Meeting in San Jose, California. November 2002 on Financial Engineering.
- AMS Meeting in Orlando, Florida. Special Session on Financial Mathematics. November 2002

Summer School Teaching

- Mathematical Finance Summer School, Shandong University. July 2018

Conferences & Seminar Talks

- Actuarial Science and Mathematical Finance Seminar, University of Amsterdam. October 2018
- Mathematical Finance and Probability Seminar, Rutgers University. April 2018
- LGS Mathematical Finance Seminar, London. December 2017
- Department of Mathematics, Dublin City University, Dublin April 2017
- Mathematical Finance Seminar, Columbia University, New York. April 2017
- Finance and Stochastics Seminar, Imperial College, London. January 2017
- Seminar on Mathematical Finance, UPMC, Paris. March 2016
- Mathematical Finance Seminar, Columbia University, New York. February 2016
- Finance and Stochastics Seminar, Imperial College, London. February 2016
- Finance Seminar, Koç University, Istanbul. December 2015
- Finance Seminar, University of Cyprus, Nicosia. December 2015
- Department of Mathematics, University of Barcelona. November 2015
- Institute of Financial and Actuarial Mathematics. Technical University of Vienna. June 2015
- Probability and Computational Finance Seminar, Carnegie Mellon University. March 2015
- Department of Mathematics, ETH Zurich. October 2014
- Department of Statistics, University of Warwick. January 2014
- Nomura Seminar, Oxford University. October 2013
- Financial/Actuarial Mathematics Seminar, University of Michigan, Ann Arbor. April 2013
- Mathematical Finance Seminar, University of Leicester. March 2013
- Mathematical Finance Seminar, Columbia University, New York. September 2012
- Department of Mathematics. Imperial College, London. November 2011
- Institute of Financial and Actuarial Mathematics. Technical University of Vienna. April 2011

- Department of Mathematics. University of Vienna. March 2011
- Department of Mathematics. Imperial College, London. March 2010
- Department of Mathematics, ETH Zurich. March 2010
- TU-Humboldt University Joint Seminar on Financial Mathematics, Berlin. February 2010
- Department of Mathematics. Imperial College, London. November 2009
- 33rd International Conference on Stochastic Processes and their Applications. Technical University of Berlin. July 2009
- Bachelier Seminar, Institut Henri Poincaré, Paris. November 2007
- Department of Mathematics. King's College, London. October 2007
- Workshop and Mid-Term Conference on Advanced Mathematical Methods for Finance, Vienna. September 2007
- Fourth World Congress of Bachelier Finance Society, Tokyo. August 2006
- Bachelier Seminar, Institut Henri Poincaré, Paris. October 2005
- Institut für Finanz- und Versicherungsmathematik. Technische Universität Wien, Vienna. September 2005
- Tanaka School of Business. Imperial College, London. February 2005
- Department of Mathematics. Heriot-Watt University, Edinburgh. February 2005
- Department of Mathematics. King's College, London. October 2004
- IMS/Bernoulli Society Meeting, Barcelona. July 2004
- Statistical Laboratory. University of Cambridge, Cambridge. November 2003
- Bachelier Seminar, Institut Henri Poincaré, Paris. May 2003
- Institut für Finanz- und Versicherungsmathematik. Technische Universität Wien, Vienna. May 2003
- Department of Mathematics. University of British Columbia, Vancouver. March 2003
- Department of Mathematics. Mc Master University, Hamilton. March 2003
- Department of Mathematics and Statistics. Boston University, Boston. February 2003

- Statistical Laboratory. University of Cambridge, Cambridge. February 2003
- Department of Mathematics. Imperial College, London. February 2003
- Department of Mathematics. Baruch College, CUNY, New York. February 2003

Conferences Organised

- Conference in honour of Philip Protter, 2019, New York.
- Current Challenges in Financial Mathematics and Economics, 2015, London.
- Invited Cluster on *Equilibrium in Financial Markets* in Bernoulli World Congress 2012, Istanbul.
- Istanbul Workshop on Mathematical Finance, 2009, Istanbul.
- Risk and Stochastics Conference, 2008, London.

Past Ph.D Students

- Takeshi Yamada, *Pricing and hedging in carbon emisson markets.* First job: Bank of Japan.
- Ilya Shenzon, *Quantitative Modelling of Market Booms and Crashes.* First job: JP Morgan.

Honors & Awards

- *Best Paper in Mathematical Finance in 2008* by Europlace Institute of Finance: Insider trading in an equilibrium model with default: a passage from reduced-form to structural modeling, with L. Campi.