CURRICULUM VITAE

Yuta Koike

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EDUCATION

- Apr. 2006-Mar. 2010: Department of Mathematics, Tokyo Institute of Technology, Japan [Bachelor (Science), 2010]
- Apr. 2010-Mar. 2012: Master course of Graduate School of Mathematical Sciences, University of Tokyo, Japan [Master (Mathematical Science), 2012]
  Master Thesis: *An estimator for the cumulative co-volatility of nonsynchronously observed semimartingales with jumps*
- Apr. 2012-Jul. 2014: Doctoral course of Graduate School of Mathematical Sciences, University of Tokyo, Japan (withdrawal for getting a job at The Institute of Statistical Mathematics)
- Apr. 2015: Ph.D. (Mathematical Science; Doctorate by way of Dissertation), Graduate School of Mathematical Sciences, University of Tokyo, Japan
  Dissertation: *Covariance estimation from ultra-high-frequency data*

WORK EXPERIENCES

- Aug. 2014-Jul. 2015: Project Researcher at Risk Analysis Research Center, The Institute of Statistical Mathematics
- Aug. 2015-Mar.2016: Project Assistant Professor at Risk Analysis Research Center, The Institute of Statistical Mathematics
- Apr.2016-Oct.2017: Assistant Professor at Department of Business Administration, Graduate School of Social Sciences, Tokyo Metropolitan University
- Nov.2017-present: Associate Professor at Graduate School of Mathematical Sciences, University of Tokyo

RESEARCH INTERESTS

Asymptotic statistics, Financial econometrics, High Frequency Data, Mathematical statistics, Statistics for stochastic processes.

PUBLICATIONS, PEER-REVIEWED

1. Brouste, A., Fukasawa, M., Hino, H., Iacus, S., Koike, Y., Masuda, H., Nomura, R., Ogihara, T., Shimizu, Y., Uchida, M., Yoshida, N. (2014). The YUIMA project: A computational framework for simulation and inference of stochastic differential equations, *Journal of Statistical Software*, 57(4), 1-51.
2. Koike, Y. (2014). An estimator for the cumulative co-volatility of asynchronously observed semimartingales with jumps, *Scandinavian Journal of Statistics*, 41(2), 460-481.
3. Koike, Y. (2014). Limit theorems for pre-averaged Hayashi-Yoshida estimator with random sampling, *Stochastic Processes and their Applications*, 124(8), 2699-2753.
4. Koike, Y. (2016). Estimation of integrated covariances in the simultaneous presence of nonsynchronicity, microstructure noise and jumps, *Econometric Theory*, 32, 533-611.
5. Koike, Y. (2016). Quadratic covariation estimation of an irregularly observed semimartingale with jumps and noise, *Bernoulli*, 22(3), 1894-1936.
6. Koike, Y. (2017). Realized volatility and related topics (in Japanese), *Journal of Business and Institutions*, 15, 15-42.
7. Koike, Y. (2017). Time endogeneity and an optimal weight function in pre-averaging covariance estimation, *Statistical Inference for Stochastic Processes*, 20(1), 15-56.
8. Koike, Y. (2017). On the asymptotic structure of Brownian motions with a small lead-lag effect, *Journal of the Japan Statistical Society*, 47(2), 1-31.
9. Hayashi, T., Koike, Y. (2018). Wavelet-based methods for high-frequency lead-lag analysis, *SIAM Journal on Financial Mathematics,* 9(4), 1208-1248.
10. Koike, Y. (2019). Gaussian approximation of maxima of Wiener functionals and its application to high-frequency data, *Annals of Statistics,* 47(3) 1663-1687.
11. Koike, Y. (2019). Mixed-normal limit theorems for multiple Skorohod integrals in high-dimensions, with application to realized covariance, *Electronic Journal of Statistics*, 13(1), 1443-1522.
12. Koike, Y., Tanoue, Y. (2019). Oracle inequalities for sign constrained generalized linear models, *Econometrics and Statistics*, 11, 145-157.
13. Koike, Y., Yoshida, N. (2019). Covariance estimation and quasi-likelihood analysis, In: J. Chevallier, S. Goutte, D. Guerreiro, S. Saglio and B. Sanhaji, eds., *Financial mathematics, volatility and covariance modelling*, vol. 2., chap. 12. Routledge, 308-335.
14. Koike, Y., Liu, Z. (2019). Asymptotic properties of the realized skewness and related statistics, *Annals of the Institute of Statistical Mathematics,* 71(4), 703-741.
15. Hayashi, T., Koike, Y. (2019). No arbitrage and lead-lag relationships, *Statistics and Probability Letters*, 154, 108530.
16. Koike, Y. (2020). De-biased graphical Lasso for high-frequency data, *Entropy*, 22(4), 456.

WORKING PAPERS

1. Koike, Y.: Inference for time-varying lead-lag relationships from ultra high frequency data. Available at SSRN: https://ssrn.com/abstract=2924301.
2. Hayashi, T., Koike, Y.: Multi-scale analysis of lead-lag relationships in high-frequency financial markets. Available at arXiv: 1708.03992.
3. Koike, Y.: High-dimensional central limit theorems for homogeneous sums. Available at arXiv: 1902.03809.
4. Koike, Y.: Notes on the dimension dependence in high-dimensional central limit theorems for hyperrectangles. Available at arXiv: 1911.00160.
5. Chernozhukov, V., Chetverikov, D., Kato, K., Koike, Y.: Improved central limit theorem and bootstrap approximation in high dimensions. Available at arXiv: 1912.10529.
6. Fang, X., Koike, Y.: High-dimensional central limit theorems by Stein's method. Available at arXiv: 2001.10917.
7. Fang, X., Koike, Y.: New error bounds in multivariate normal approximations via exchangeable pairs with applications to Wishart matrices and fourth moment theorems. Available at arXiv: 2004.02101.

PRESENTATIONS AT INTERNATIONAL CONFERENCES

1. 4th Annual Modeling High Frequency Data in Finance Conference, New Jersey, USA, Jul., 2012.
2. 3rd International Conference "High-Frequency Data Analysis in Financial Markets", Hiroshima, Japan, Nov, 2012.
3. 29th European Meeting of Statisticians (EMS 2013), Budapest, Hungary, Jul., 2013.
4. Asymptotic Statistics and Related Topics: Theories and Methodologies, Tokyo, Japan, Sep., 2013.
5. 6th International Conference of the ERCIM WG on Computational and Methodological Statistics (ERCIM 2013), London, UK, Dec., 2013.
6. Statistics for Stochastic Processes and Analysis of High Frequency Data, Paris, France, Dec., 2013.
7. The 3rd Institute of Mathematical Statistics Asia Pacific Rim Meeting (IMS-APRM 2014), Taipei, Taiwan, Jul., 2014.
8. 8th International Conference on Computational and Financial Econometrics (CFE 2014), Pisa, Italy, Dec., 2014.
9. 3rd Symposium on "Financial Engineering and ERM", Tokyo, Japan, Mar., 2015.
10. Statistique Asymptotique des Processus Stochastiques X (S.A.P.S. X), Le Mans, France, Mar., 2015.
11. Statistics for Stochastic Processes and Analysis of High Frequency Data IV, Paris, France, Mar., 2015.
12. 60th World Statistics Congress (ISI 2015), Rio de Janeiro, Brazil, Jul., 2015.
13. 2015 Joint Statistical Meeting, Seattle (JSM 2015), USA, Aug., 2015.
14. 9th International Conference on Computational and Financial Econometrics (CFE 2015), London, UK, Dec., 2015.
15. ISI-ISM-ISSAS Joint Conference 2016, Taipei, Taiwan, Feb., 2016.

16. Statistics for Stochastic Processes and Analysis of High Frequency Data V, Paris, France, Mar., 2016.
17. The 4th Institute of Mathematical Statistics Asia Pacific Rim Meeting (IMS-APRM 2016), Hong Kong, China, June, 2016.
18. TMU Workshop on Financial Mathematics and Statistics 2016, Tokyo, Japan, Nov., 2016.
19. 9th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2016), Seville, Spain, Dec., 2016.
20. Portfolio dynamics and limit order books, Paris, France, Dec., 2016.
21. ASC2017: Asymptotic Statistics and Computations, Tokyo, Japan, Feb., 2016.
22. The 1st International Conference on Econometrics and Statistics (EcoSta 2017), Hong Kong, China, June, 2017.
23. The 10th annual SoFiE conference (SoFiE 2017), New York, USA, June, 2017.
24. The fourth annual conference of the International Association for Applied Econometrics (IAAE 2017), Sapporo, Japan, June, 2017.
25. Asymptotic Statistics of Stochastic Processes and Applications XI, Saint Petersburg, Russia, Jul., 2017.
26. TMU Workshop on Finance 2017, Tokyo, Japan, Aug., 2017.
27. 10th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2017), London, UK, Dec., 2017.
28. ASC2018: Asymptotic Statistics and Computations, Tokyo, Japan, Feb., 2018.
29. 2018 Kagawa International Symposium "Recent Developments in Statistics and Econometrics", Kagawa, Japan, Mar., 2018.
30. Computational Aspects of Simulation and Inference for Stochastic Processes and the YUIMA Project, Milan, Italy, Mar., 2018.
31. The 2nd International Conference on Econometrics and Statistics (EcoSta 2018), Hong Kong, China, June 2018.
32. The 5th Institute of Mathematical Statistics Asia Pacific Rim Meeting (IMS-APRM 2018), Singapore, June 2018.
33. 10th World Congress of the Bachelier Finance Society (Bachelier 2018), Dublin, Ireland, July 2018.
34. CEQURA Conference 2018 on Advances in Financial and Insurance Risk Management, Munich, Germany, Oct. 2018.
35. 11th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), Pisa, Italy, Dec. 2018.
36. 4th Yuima Users Workshop, Tokyo, Japan, Jan. 2019.
37. ASC2019: Asymptotic Statistics and Computations, Tokyo, Japan, Jan., 2019.
38. The Second YUIMA Conference, Rome, Italy, Mar. 2019.
39. The Third YUIMA Conference, Brixen-Bressanone, Italy, June 2019.
40. The 3rd KAFE-JAFEE International Conference on Financial Engineering, Busan International Finance Center, Busan, Korea, July 2019.
41. The 32nd European Meeting of Statisticians (EMS 2019), Palermo, Italy, July 2019.

42. The 62nd ISI World Statistics Congress 2019 (ISI WSC 2019), Kuala Lumpur Convention Centre, Kuala Lumpur, Malaysia, Aug. 2019.
43. 12th International Conference of the ERCIM WG on Computational and Methodological Statistics (CMStatistics 2018), London, UK, Dec. 2019.
44. The 11th ICSA International Conference, Hangzhou, China, Dec. 2019.

TEACHING EXPERIENCES

Apr. 2016-Sep. 2016	Financial Data Science Exercises for graduate students
Apr. 2016-Sep. 2016	Introduction to Economic Mathematics I for the 1st year undergraduate students
Apr. 2016-Sep. 2016	Introduction to Statistics I for the 1st year undergraduate students
Oct. 2016-Mar. 2017	Financial Time Series Analysis Exercises for graduate students
Oct. 2016-Mar. 2017	Stochastic Analysis Exercises for graduate students
Oct. 2016-Mar. 2017	Introduction to Economic Mathematics II for the 1st year undergraduate students
Oct. 2016-Mar. 2017	Introduction to Statistics II for the 1st year undergraduate students
Apr. 2017-Sep. 2017	Financial Data Science Exercises for graduate students
Apr. 2017-Sep. 2017	Advanced Stochastic Analysis Exercises for graduate students
Apr. 2017-Sep. 2017	Introduction to Economic Mathematics I for the 1st year undergraduate students
Apr. 2017-Sep. 2017	Introduction to Statistical Data Analysis II for the 2nd year undergraduate students
Oct. 2017-Mar. 2018	Financial Time Series Analysis Exercises for graduate students
Oct. 2017-Mar. 2018	Stochastic Analysis Exercises for graduate students
Oct. 2017-Mar. 2018	Introduction to Economic Mathematics II for the 1st year undergraduate students
Oct. 2017-Mar. 2018	Introduction to Statistical Data Analysis I for the 1st year undergraduate students
Apr. 2018-Sep. 2018	Financial Data Science Exercises for graduate students
Apr. 2018-Sep. 2018	Introduction to Statistical Data Analysis II for the 2nd year undergraduate students
Oct. 2018-Mar. 2019	Introduction to Statistical Data Analysis I for the 1st year undergraduate students
Oct. 2018-Mar. 2019	Financial Time Series Analysis Exercises for graduate students
Oct. 2018-Mar. 2019	Introduction to Statistics for the 2nd year undergraduate students
Apr. 2019-June 2019	Introduction to Programming for graduate students
Apr. 2019-Sep. 2019	Introduction to Statistical Data Analysis II for the 2nd year undergraduate students
Apr. 2019-Sep. 2019	Probability Theory I for graduate students
Oct. 2019-Dec. 2019	Numerical Methods in Finance for graduate students
Oct. 2019-Mar. 2020	Introduction to Statistical Data Analysis I for the 1st year undergraduate students

MEMBERSHIPS OF ACADEMIC SOCIETIES

Japan Statistical Society, Mathematical Society of Japan, Japanese Association of Financial Econometrics and Engineering (JAFEE)

MEMBERSHIPS OF EDITORIAL BOARDS

Aug. 2019-present   Asia-Pacific Financial Markets (Associate Editor)

FELLOWSHIPS

Apr. 2013-Mar. 2015	JSPS Grant-in-Aid for JSPS Fellows
Apr. 2016-Mar. 2019	JSPS KAKENHI Grant Number JP16K17105
Apr. 2019-present	JSPS KAKENHI Grant Number JP19K13668

AWARDS

Mar. 2012	Graduate school of mathematics, University of Tokyo, department chair award
Sep. 2013	The 2013 Japanese Joint Statistical Meeting presentation award: 2nd place
Sep. 2018	The 32nd JSS Ogawa award
Sep. 2019	The 1st ISI Tokyo Memorial Award