

Curriculum Vitae
Wei-Liem Loh
Professor
Department of Statistics and Data Science
National University of Singapore
Singapore 117546
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Employment History

Education

- B.Sc. Hons. (1980), Mathematics, University of Singapore.
- M.Sc. (1984), Mathematics, National University of Singapore.
- M.S. (1986), Statistics, Stanford University.
- Ph.D. (1988), Statistics, Stanford University.

Professional Association Membership

- Bernoulli Society.
- Institute of Mathematical Statistics.
- International Chinese Statistical Association.

Awards and Honors

- Elected Fellow of the Institute of Mathematical Statistics in 2007.
- Elected member of the International Statistical Institute in 2007.
- 2013 American Statistical Association Outstanding Statistical Application Award for the paper by Kass, Kelly and Loh (2011) entitled “Assessment of Synchrony in Multiple Neural Spike Using Loglinear Point Process Models”, *Ann. Appl. Statist.* **5** 1262-1292.

Editorial and Committee Service

- Member of the IMS Committee on Memorials (2021-24).
- Scientific Committee Co-Chair of the 6th Institute of Mathematical Statistics Asia Pacific Rim Meeting (IMS-APRM), Melbourne, Australia. Postponed to 2023 because of Covid-19.

- ISI Founders of Statistics Prize Selection Committee member (2020-2021).
- Member of the ISI 2017 Committee for the World Bank Trust Fund for Statistical Capacity Building (WBTFSCB).
- Bernoulli Nominating Committee member (2015-2016).
- ISI Karl Pearson Prize Selection Committee member (2014-2015).
- Peer Review Committee member of the Mathematics & Statistics department of IIT Kanpur, India (27-28 March 2014).
- Institute of Mathematical Statistics Nominating Committee member (August 2012—July 2013).
- Executive Editor (February 2012—2018), *J. Statist. Plann. Inference*.
- Associate Editor (January 2007—2021), *Ann. Statist.*, (an official journal of the Institute of Mathematical Statistics).
- Associate Editor (1996—2019), *Statist. Sinica*, (co-sponsored by the Institute of Statistical Science, Academia Sinica, Taipei, Taiwan and the International Chinese Statistical Association, Delaware, U.S.A.).

Publications

1. Estimating the parameters of some common Gaussian random fields with nugget under fixed-domain asymptotics (2022+), (with S. Sun). *Bernoulli*. To appear.
2. Smoothness estimation of nonstationary Gaussian random fields from irregularly spaced data observed along a curve (2021), (with J. Wen and S. Sun). *Electron. J. Statist.* **15** 6071-6150.
3. On fixed-domain asymptotics, parameter estimation and isotropic Gaussian random fields with Matérn covariance functions (2021), (with S. Sun and J. Wen). *Ann. Statist.* **49** 3127-3152.
4. Estimating the smoothness of a Gaussian random field from irregularly spaced data via higher-order quadratic variations (2015). *Ann. Statist.* **43** 2766-2794.
5. On the sparsity of signals in a random sample (2012), (with B. Jiang). *Biometrika* **99** 915-928.
6. Assessment of synchrony in multiple neural spike trains using loglinear point process models (2011), (with R. E. Kass and R. C. Kelly). *Ann. Appl. Statist.* **5** 1262-1292.
7. On fixed-domain asymptotics and covariance tapering in Gaussian random field models (2011), (with D. Wang). *Electron. J. Statist.* **5** 238-269.

8. Estimating the number of neurons in multi-neuronal spike trains (2011), (with M. Li). *Ann. Appl. Statist.* **5** 176-200.
9. A multivariate central limit theorem for randomized orthogonal array sampling designs in computer experiments (2008). *Ann. Statist.* **36** 1983-2023.
10. Some theoretical results on neural spike train probability models (2007), (with H. P. Chan). *Ann. Statist.* **35** 1983-2023 2691-2733.
11. Fixed-domain asymptotics for a subclass of Matérn-type Gaussian random fields (2005). *Ann. Statist.* **33** 2344-2394.
12. On the asymptotic distribution of some randomized quadrature rules (2005). *Stein's Method and Applications*, (A. D. Barbour and L. H. Y. Chen, eds.) 209-222. World Scientific, Singapore.
13. On the characteristic function of Pearson type IV distributions (2004). *A Festschrift for Herman Rubin*, (A. DasGupta, ed.) 171-179. IMS Lecture Notes Monogr. Ser. **45**, Inst. Math. Statist., Beachwood.
14. On the asymptotic distribution of scrambled net quadrature (2003). *Ann. Statist.* **31** 1282-1324.
15. A file linkage problem of DeGroot and Goel revisited (2001), (with H. P. Chan). *Statist. Sinica* **11** 1031-1045.
16. Estimating structured correlation matrices in smooth Gaussian random field models (2000), (with T. K. Lam). *Ann. Statist.* **28** 880-904.
17. Linear discrimination with adaptive ridge classification rules (1997). *J. Multivariate Anal.* **62** 169-180.
18. Estimating mixing densities in exponential family models for discrete variables (1997), (with C. H. Zhang). *Scand. J. Statist.* **24** 15-32.
19. Estimating the integral of a squared regression function with Latin hypercube sampling (1997). *Statist. Probab. Lett.* **31** 339-350.
20. An Edgeworth expansion for U -statistics with weakly dependent observations (1996). *Statist. Sinica* **6** 171-186.
21. Global properties of kernel estimators for mixing densities in exponential family models for discrete variables (1996), (with C. H. Zhang). *Statist. Sinica* **6** 561-578.
22. A combinatorial central limit theorem for randomized orthogonal array sampling designs (1996). *Ann. Statist.* **24** 1209-1224.
23. On Latin hypercube sampling (1996). *Ann. Statist.* **24** 2058-2080.
24. On linear discriminant analysis with adaptive ridge classification rules (1995). *J. Multivariate Anal.* **53** 264-278.

25. On m -dependence and Edgeworth expansions (1994). *Ann. Inst. Statist. Math.* **46** 147-164.
26. Estimating the mixing density of a mixture of power series distributions (1993). *Statist. Decision Theory and Related Topics V*, (S. S. Gupta and J. O. Berger, eds.) 87-98. Springer, New York.
27. Compound Poisson approximation for nonnegative random variables via Stein's method (1992), (with A. D. Barbour and L. H. Y. Chen). *Ann. Probab.* **20** 1843-1866.
28. Stein's method and multinomial approximation (1992). *Ann. Appl. Probab.* **2** 536-554.
29. Estimating the common mean of two multivariate normal distributions (1991). *Ann. Statist.* **19** 297-313.
30. Estimating covariance matrices II (1991). *J. Multivariate Anal.* **36** 163-174.
31. Estimating covariance matrices (1991). *Ann. Statist.* **19** 283-296.

PhD students graduated to date

- 2009: Mengxin LI PhD, *On neural spike sorting with mixture models.*
- 2010: Daqing WANG PhD, *Fixed domain asymptotics and consistent estimation for Gaussian random field models in spatial statistics and computer experiments.*
- 2011: Binyan JIANG PhD, *On the sparsity of signals in a random sample.*
- 2017: Jun WEN PhD, *On high-dimensional covariance matrices estimation.*
- 2021: Saifei SUN PhD, *Parameter estimation for isotropic Gaussian random fields with the generalized Wendland covariance function or the Matérn covariance function with nugget.*