CURRICULUM VITAE

NAME: Chan Hock Peng

DEPARTMENT: Statistics and Applied Probability, National University of Singapore

Education:

PhD in Statistics, Stanford University 1998

BSc in Mathematics (Hons, first class), National University of Singapore 1993

Employment:

National University of Singapore

Head of Department 2015–2018

Deputy Head 2014–2015

Member of University Promotion & Tenure Committee 2013–2015

Vice-Dean 2013–2014

Professor 2011–present

Chair of Faculty Promotion & Tenure Committee (Junior) 2010–2012

Associate Professor 2006–2011

Assistant Professor 1998–2005

Membership of Societies:

Institute of Mathematical Statistics

Awards (post PhD):

Dean's Chair Professorship 2010–2011

Outstanding Scientist Award 2009

University Committees:

University level

Board of Graduate Studies 2013–2014

University Committee on Educational Policy 2013–2014

Faculty level

Promotion and Tenure Committee (Junior) 2008–2012

Research Committee 2007–2014

Department level (Chair)

Search Committee 2007–2008, 2012–2013, 2014–2015

Research Benchmarking Committee 2012–2013

Research Committee 2006–2008

Associate Editor

Journal of Statistical Planning and Inference 2013–present

Methodologies in Computing and Applied Probability 2008–present

Sequential Analysis 2005–present

Invited conference presentations:

5th International Workshop on Applied Probability, New York, June 2015 (plenary).

Asian Meeting of the Econometric Society, Singapore, August 2013.

International Congress of Chinese Mathematicians, Taipei, July 2013.

IWSM&A, Rouen, France, June 2012.

ICAPS, Hong Kong, December 2011.

ICSA, New York City, June 2011.

WNAR/IMS, San Luis Obispo, June 2011.

International Workshop on Sequential Methodology, Stanford, June 2011.

Change-point Methodology, Applications and Related Topics, Shanghai, May 2011.

International Workshop on Applied Probability, Madrid, Spain, July 2010.

IMS Asia Pacific Rim Meeting, Seoul, July 2009.

ICSA Applied Statistics Symposium, San Francisco, June 2009.

International Workshop on Applied Probability, Compeigne, France, July 2008.

Conference on Prob. with Applications to Finance & Insurance, Hong Kong, Dec 2005.

International Workshop on Applied Probability, Storrs, USA, May 2006.

Sequential Analysis, Time-Series and Related Topics, Taipei, December 2004.

Ruin Prob., Monte Carlo Methods & Insurance Mathematics, Hong Kong, June 2004.

ICSA, Hong Kong, August 2001.

The Third World Congress of Nonlinear Analysts, Catania, Italy, July 2000.

Research grants as PI:

Comparative study of change-point test statistics via their p-value approximations 2015-

18

An analysis of change-point test statistics

Techniques in change-point detection with applications in DNA sequence matching

Computation of rare events in complex models

Moderate deviations approx., applications to imaging, signal detection, bioinformatics

Multiple comparisons in cluster detection and genomics

Particle filters for hidden Markov models

Graduate students supervised:

Heng Chiang Wee (Nanyang Junior College, self-financed student)

Cai Qingyun (Xiamen University)

Gan Luhui

Yu Xiaojiang

Courses taught in NUS:

2nd year students

Mathematical Statistics

Probability

Statistics

3rd year students

Stochastic Processes I

Design and Analysis of Experiments

4th year (Honours) students

Design and Analysis of Clinical Trials

Longitudinal Data Analysis

Linear Models

Stochastic Processes II

Master's level

Statistics for Quality and Productivity Improvement

Nonparametric Statistics

Statistics Methods for Genetics Analysis

Sequential Analysis

PhD level

    Graduate Seminar in Statistics

    Advanced Topics in Applied Statistics

    Advanced Probability

Publications:

1. Optimal sequential detection in multi-strea data, under review.

2. A sharp first order analysis of Feynman-Kac particle models (with P. Del Moral, A. Jasra), under review.

3. Multiscale adaptive inference on conditional moment inequalities (with T. Armstrong), accepted for publication by *Journal of Econometrics*.

4. Theory of segmented particle filters (with C.W. Heng, A. Jasra), *Advances in Applied Probability* **48** (2016) 69–87.

5. Optimal detection of multi-sample aligned sparse signals (with G. Walther), *Annals of Statistics* **43** (2015) 1865–1895.

6. A general theory of particle filters in hidden Markov models and some applications (with T.L. Lai) *Annals of Statistics* **41** (2013) 2877–2904.

7. Discussion of "Change-points: From Sequential Detection to Biology and Back" by David Siegmund (with T.L. Lai) *Sequential Analysis* **32** (2013).

8. Detection with the scan and average likelihood ratio (with G. Walther) *Statistica Sinica* **23** (2013) 409–428.

9. Rare event simulation of heavy-tailed random walks by sequential importance sampling and resampling (with S. Deng and T. L. Lai) *Advances in Applied Probability* **44** (2012) 1173–1196.

10. A sequential Monte Carlo approach to computing tail probabilities in stochastic models (with T.L. Lai) *Annals of Applied Probability* **21** (2011) 2315–2342.

11. Log-linear, logistic model fitting and local score statistics for cluster detection with covariate adjustments (with I. Tu) *Statistics in Medicine* **31** (2011) 91–100.

12. Importance sampling of word patterns in DNA and protein sequences (with N.R. Zhang and L.H.Y. Chen) *Journal of Computational Biology* **17** (2010) 1697–1709.

13. Maxima of moving sums in a Poisson random field *Advances in Applied Probability*, **41** (2009) 647–663.

14. Detection of spatial clustering with average likelihood ratio test statistics *Annals of Statistics* **37** (2009) 3985–4010.

15. Discussion on "Is average run length to false alarm always an informative criterion?" by Mei Yajun (with T.L. Lai) *Sequential Analysis* (2008).

16. Boundary crossing probability computations in the analysis of scan statistics (with I. Tu and N.R. Zhang) in *Scan Statistics–Theory and Applications*, eds J. Glaz and V. Pozdnyakov and S. Wallenstein, Birkhauser (2008).

17. Efficient importance sampling for Monte Carlo evaluation of exceedance probabilities (with T.L. Lai) *Annals of Applied Probability* **17** (2007) 440–473.

18. Scan statistics with weighted observations (with N.R. Zhang) *Journal of the American Statistical Association* **102** (2007) 595–602.

19. Optimal strategies for a class of sequential control problems with precedence relations (with C.D. Fuh and I. Hu) *Annals of Statistics* **35** (2007) 1722–1748.

20. Some theoretical results on neural spike train probability models (with W.L. Loh) *Annals of Statistics* **35** (2007) 2691–2733.

21. Multi-armed bandit problem with precedence relations" (with C.D. Fuh and I. Hu) *IMS-Lecture Notes* **52** (2006) 223–235.

22. Sequential generalized likelihood ratios and adaptive treatment allocation for optimal sequential selection (with T.L. Lai), *Sequential Analysis* **25** (2006) 179–202.

23. Maxima of Gaussian random fields and moderate deviation approximations to boundary crossing probabilities of sums of random variables with multidimensional indices (with T.L. Lai), *Annals of Probability* **34** (2006) 80–121.

24. Importance sampling for generalized likelihood ratio procedures in sequential analysis (with T.L. Lai), *Sequential Analysis* **24** (2005) 259–278.

25. Summation test for gap penalties and strong law of the local alignment score *Annals of Applied Probability* **15** (2005) 1492–1505.

26. Upper bounds and importance sampling of p-values for DNA and protein sequence alignments *Bernoulli* **9** (2003) 183–199.

27. Saddlepoint approximations and nonlinear boundary crossing probabilities for Markov random walks" (with T.L. Lai) *Annals of Applied Probability* **13** (2003) 395–429.

28. Boundary crossing probabilities for scan statistics and their applications to change-point detection (with T.L. Lai, plenary lecture in IWAP) *Methodology and Computing in Applied Probability* **4** (2002) 317–336.

29. A file linkage problem of DeGroot and Goel revisited (with W.L. Loh) *Statistica Sinica* **11** (2001) 1031–1045.

30. Asymptotic approximations for error probabilities of sequential or fixed sample size tests in exponential families (with T.L. Lai) *Annals of Statistics* **8** (2000) 1638–1669.