TONY SIT 薛賢鴻

Professor
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Bio

Tony currently serves as a professor in the Department of Statistics and Data Science at the Chinese University of Hong Kong. His primary research interests encompass survival analysis, quantile regression, and risk management. Additionally, he is actively engaged in investigating challenges related to social networks and climate modelling. Beyond his academic pursuits, Tony collaborates with professionals in the pharmaceutical and algorithmic trading industries.

Education

B.Sc. and M.Phil. in Risk Management Science, The Chinese University of Hong Kong

Ph.D. in Statistics, Columbia University

Research Interests

Survival analysis; Quantile regression; Network modelling; Risk management

Publications and Preprints

Statistical Methodology Papers

1. Kim, J.P., Lu, W., Sit, T and Ying, Z. (2013), "A Unified Approach to Semiparametric Transformation Models under General Biased Sampling Scheme," *Journal of the American Statistical Association*, 108, 217–27.

2. Brown, M., de la Pena, V.H. and Sit, T. (2015), "From Boundary Crossing of Non-random Functions to Boundary Crossing of Stochastic Processes" *Probability for Engineering and Information Science*, 29, 345–59.

3. Sit, T., Liu, M., Shnaidman, M., and Ying, Z. (2016), "Design and Analysis of Clinical Studies in the Presence of Delayed Treatment Effect," *Statistics in Medicine*, 35, 1774–9.

4. Kim, J.P., Sit, T. and Ying, Z. (2016), "Accelerated Failure Time Model under General Biased Sampling Scheme," *Biostatistics*, 17, 576–88.

5. Chan, N.H. and Sit, T. (2016), "Artifactual Unit Root Behavior of Value at Risk (VaR)," *Statistics and Probability Letters*, 116, 88–93.

6. Brown, M., de la Pena, V. H., Klass, M. and Sit, T. (2016), "On an Approach to Boundary Crossing by Stochastic Processes," *Stochastic Processes and their Applications*, 126, 3843–53.

7. Xu, G., Sit, T., Wang, L. and Huang, C.-Y. (2017), "Estimation and Inference of Quantile Regression for Survival Data under Biased Sampling," *Journal of the American Statistical Association*, 112, 1571–86.

8. Chan, K.C.G., Ling, H.K., Sit, T. and Yam, S.C.P. (2018), "Estimation of a Monotone Density in *S*-sample Biased Sampling Models," *The Annals of Statistics*, 46, 2125–52.

9. Sit, T., Xing, Y., Xu, Y. Z. and Gu, M.G. (2019), "Pseudo Value Method for Ultra High-dimensional Semiparametric Models with Life-time Data," *Statistica Sinica*, 29, 1939–61.

10. Chen, J., Sit, T. and Wong, H. Y. (2019), "Simulation-based Value-at-Risk for Nonlinear Portfolios," *Quantitative Finance*, 19, 1639–58.

11. Cai, Z. and Sit, T. (2020), "Quantile Regression Model with Time-Varying Covariates under Length-Biased Sampling," *Biometrics*, 74, 1201-1215.

12. Chu, C.W., Sit, T. and Xu, G. (2021), "Transformed Dynamic Quantile Regression on Censored Data," *Journal of the American Statistical Association* 116, 874-886.

13. Sit, T., Ying, Z. and Yu, Y. (2021), "Event History Analysis of Dynamic Networks," *Biometrika*, 108, 223-230.

14. Chan, K.C.G., Ling, H.K., Sit, T. and Yam, S.C.P. (2021), "On Asymptotic Equivalence of the NPMLE of a Monotone Density and a Grenander-type Estimator in Multi-sample Biased Sampling Models," *Electronic Journal of Statistics*, 15, 2876-904.

15. Xing, Y., Sit, T. and Wong, H.Y. (2022), "Variance Reduction for Risk Measure Estimation with Importance Sampling," *Quantitative Finance*, 22, 657-673.

16. Tsang, M.Y., Sit, T. and Wong, H.Y. (2022), "Robust Portfolio Optimization with respect to Spectral Risk Measures under Correlation Uncertainty," *Applied Mathematics & Optimization*, 86, Article number: 8.

17. Lee, S.M., Sit, T. and Xu, G. (2023), "Efficient Estimation for Censored Quantile Regression," *Journal of the American Statistical Association* 118, 2762-2775.

18. Sit, T. and Xing, Y. (20223), "Distributed Censored Quantile Regression," *Journal of Computational and Graphical Statistics* 32, 1685-1697.

19. Cai, Z. and Sit, T. (2023), "Interquantile Smoothness in Censored Quantile Regressions via Induced Smoothing," *Biometrics* 79, 3549-3563.

20. Chu, C.W. and Sit, T. (2024), "Censored Interquantile Regression Model with Time-Dependent Covariates," *Journal of the American Statistical Association* 119, 1592-1603.

21. Tsang, M.Y., Sit, T. and Wong, H.Y. (2025), "Adaptive Robust Online Portfolio Section," *European Journal of Operational Research* 321, 214-230.

22. Yeung, K., Sit, T., and Fujii, K. (2025), "Transformer-based Neural Marked Spatio-temporal Point Process Model for Football Match Events Analysis," *Applied Intelligence* 55, 335.

23. Chu, C.W., Sit, T. and Ying, Z. (2025+), "Censored Quantile Regression with Time-Dependent Covariates" To appear in *Journal of the Royal Statistical Society: Series B*.

24. Lee, S. M., Chen Y.X. and Sit, T. (2025+), "A Latent Variable Approach to Learning High-dimensional Multivariate longitudinal Data," Under revision.

25. Tsang, M.Y., Sit, T. and Wong, H.Y. (2025+), "Contextual Quantile Minimization for Two-stage Stochastic Programs," Submitted.

26. Wang, Z.X., Sit, T. and Wong, H.Y. (2025+), "Pricing and Hedging Temperature Risk: Utilizing Geospatial Stochastic Volatility," Submitted.

27. Li, M., Sit, T., Xu, G. and Huang, C.-Y. (2025+), "Competing Risks Analyses with Semiparametric Density Ratio Models," (Manuscript).

Interdisciplinary Research

1. Brown, M., de la Pena, V.H., Kushnir, Y., Ravindarath, A. and Sit, T. (2011), "On a new approach for estimating threshold crossing times with an application to global warming," *Proceeding of the New York Workshop on Computer, Earth, and Space Sciences 2011*, Goddard Institute for Space Studies (GISS), National Aeronautics and Space Administration (NASA).

2. Lam, H.S., Sit, T., Chau, C.L., Cheung, H.M., Wong, P.S. and Ng, P.C. (2016), "Attitudes of Parents and Health Care Workers to Major Surgery for High-Risk Preterm Infants," *The Journal of Paediatrics*, 177, 78–83.e3.

3. Leung, K.T., Lam, H.S., Chan, K.Y.Y., Sit, T., Wong, R.P.O., Yu, J.W.S., Li, K. and Ng, P.C. (2016), "Regulation of Circulating Hematopoietic Stem/Progenitor Cells in Preterm Infants with Septicemia," *Stem Cells and Development*, 25, 1780–7.

4. Ng, P.C., Chan, K.Y.Y., Ma, T.P.Y., Sit, T., Lam, H.S., Leung, K.T., Wong, R.P.O., Chan, C.N.L., Pang, L.I.Y. Cheung, H.M., Chu, W.C.W. and Li, K. (2019), "Plasma miR-1290 is a Novel and Specific Biomarker for Early Diagnosis of Necrotizing Enterocolitis in Preterm Infants – Biomarker Discovery and a Prospective Cohort

Evaluation," *The Journal of Paediatrics*, 205, 83–90.e10.

5. Leung, K.T., Ng, P.C., Li, K., Chan, K.Y.Y., Leung, A.W.K., Ng, M.H.L., Zhang, X.-B., Tsang, K.S., Sit, T., Yu, J.W.S., Wong, Y.T.S., Cheng, F.W.T, Leung, T.F. and Li, C.K. (2020), "CD9 Blockade Suppresses Disease Progression of High-risk Pediatric B-cell Precursor Acute Lymphoblastic Leukemia and Enhances Chemosensitivity," *Leukemia*, 34, 709-20.

6. Zhang, J., Cheuk, K.-Y., Xu, L., Wang, Y., Feng, Sit, T., Cheung, K.-L., Nepotchatykh, E., Lam, T.-P., Liu, Z., Hung, A.L.H., Zhu, Z., Moreau, A., Cheng, J.C.Y., Qiu, Y. and Lee, W.Y.W. (2020) "A Validated Composite Model to Predict Risk of Curve Progression in Adolescent Idiopathic Scoliosis," *EClinicalMedicine* 18:100236.

7. Ng, P.C., Chan, K.Y.Y., Lam, H.S., Wong, R.P.O., Ma, T.P.Y., Sit, T., Leung, K.T., Chan, L.C.N., Pang, Y.L.I., Cheung, H.M., Chiu, W.W.C. and Li, K. (2020) "A Prospective Cohort Study of Fecal miR-223 and miR-451a as Non-invasive Specific Biomarkers for Diagnosis of Necrotizing Enterocolitis in Preterm Infants," *Neonatology*, 117, 555-561.

8. Lin, P.H., Shen, B.R., Ling, A., Wong, K.C., Chan, N.H., Sit, T., Chan, P.P., Tham, C.C. and Cheung, Y.L. (2022+), "Early Rate of Optical Coherence Tomography Angiography Changes is Associated with Normal Tension Glaucoma Progression Risk," (Manuscript).

Book Chapters & Book Review

1. Ying, Z. and Sit, T. (2017), "Analysis of Survival Data and Quantile Regression" in *Handbook of Quantile Regression, Chernozhukov, V., He, X., Koenker, R. and Peng, L.* Eds: Chapman & Hall/CRC.

2. Chan, N.H., Li, Y.X. and Sit, T. (2023), "Excess Mean of Power (EMP) Estimator of Extreme Value Index," *Research Papers in Statistical Inference for Time Series and Related Models: Essays in Honor of Masanobu Taniguchi* , Liu, Y., Hirukawa, J. and Kakizawa, Y. Eds: Springer Nature Singapore Pte Ltd.

3. Sit, T. (2025+), "Financial Data Analytics with R: Monte-Carlo Validation (by Jenny K. Chen) – Book Review," To appear in *Journal of the American Statistical Association*.

Editorial Services

1. Associate Editor, *Statistica Sinica* (2023-)
2. Associate Editor, *Journal of Data Science* (2023-)
3. Associate Editor, *ACM Transactions on Probabilistic Machine Learning* (2023-)
4. Academic Editor, *Journal of Forecasting* (2021-)

Graduate Students

1. Junyao Chen (co-supervised with Prof. Hoi Ying Wong), M.Phil. in Risk Management Science, CUHK.

2. George Chi Wing Chu, M.Phil. in Risk Management Science, CUHK. Assistant Professor at City University of Hong Kong upon obtaining his Ph.D. degree in Statistics at Columbia University.

3. Yue Xing (co-supervised with Prof. Hoi Ying Wong), M.Phil. in Risk Management Science, CUHK. Assistant Professor at Michigan State University upon obtaining her Ph.D. in Statistics at Purdue University.

4. Arthur Sze Ming Lee, M.Phil. in Risk Management Science, CUHK. Pursuing Ph.D. in Statistics at London School of Economics.
5. Yuxin Li (co-supervised with Prof. Ngai Hang Chan), Ph.D. in Statistics, CUHK.

6. Tim Man Yiu Tsang (co-supervised with Prof. Hoi Ying Wong), M.Phil. in Risk Management Science, CUHK. Pursuing Ph.D. in Industrial and Systems Engineering at Lehigh University.

7. Andrian Dzi Hin Wong (co-supervised with Dr Philip Pak Kuen Lee), M.Phil. in Risk Management Science, CUHK.

8. Zexi Cai, M.Phil. in Risk Management Science, CUHK. Pursuing Ph.D. in Biostatistics at Columbia University.

9. Sihan Chen, M.Phil. in Risk Management Science, CUHK. Pursuing Ph.D. in at King Abdullah University of Science and Technology.

10. Zexian Wang (co-supervised with Prof. Hoi Ying Wong), M.Phil. in Risk Management Science, CUHK. Pursuing Ph.D. in Statistics at Texas A&M University.

11. Yu Guo, Ph.D. in Statistics, CUHK. Ongoing.

12. Si Cheng Fong (co-supervised with Prof. Hoi Ying Wong), Ph.D. in Statistics, CUHK. Ongoing.

13. Zhuogen Wu (co-supervised with Prof. Hoi Ying Wong), M.Phil. in Risk Management Science, CUHK. Ongoing.

14. Peiming Lai, Ph.D. in Statistics, CUHK. Ongoing.

15. Yulin Zhu (co-supervised with Prof. Hoi Ying Wong), Ph.D. in Statistics, CUHK. Ongoing.

16. Sam Chak Sum Lui, M.Phil. in Risk Management Science, CUHK. Ongoing.

17. Chloe Kexin Qiu, M.Phil. in Risk Management Science, CUHK. Ongoing.

18. Sunny Yin Sun Wong, M.Phil. in Statistics, CUHK. Ongoing.

Teaching

RMSC2001 – Introduction to Risk Management
RMSC6007 – Risk and Financial Data Analytics with Python
STAT5010 – Theory of Statistics (2017-23)
STAT5102 – Regression in Practice (2016-21)
RMSC5101 – Statistical Methods in Risk Management and Finance (2023-24)
RMSC6006 – Portfolio Theory from Risk Management Perspectives (2018-20)