

# Raymond Ka Wai Wong

## Curriculum Vitae

Address: Department of Statistics  
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### Education

- 2010–2014    **Doctor of Philosophy**    *University of California at Davis*  
Major in Statistics
- 2008–2010    **Master of Philosophy**    *The Chinese University of Hong Kong*  
Major in Statistics
- 2004–2008    **Bachelor of Science**    *The Chinese University of Hong Kong*  
Major in Statistics with minor in Mathematics and Risk Management Science

### Academic positions

- 2017–now    **Assistant Professor**    *Texas, U.S.A.*  
*Department of Statistics, Texas A&M University*
- 2014–2017    **Assistant Professor**    *Iowa, U.S.A.*  
*Department of Statistics, Iowa State University*

### Honors and awards

- 2014    **Best Student Paper Award**    *International Indian Statistical Association*  
Awarded to a winner of the student paper competition
- 2014    **Los Alamos Statistical Sciences Conference Grant**    *Los Alamos National Laboratory*  
Awarded with a grant to support participation in the *Conference on Data Analysis* poster session
- 2011    **Student Paper Award**    *Section on Nonparametric Statistics, American Statistical Association*  
Awarded to a winner of the student paper competition
- 2011    **Julius Blum Award**    *Department of Statistics, University of California at Davis*  
Awarded annually since 1983 to an outstanding Statistics graduate student
- 2005–2008    **Deans Honor List**    *Faculty of Science, The Chinese University of Hong Kong*  
For three consecutive academic years
- 2003    **Excellent Performance Award**    *Department of Mathematics, The Chinese University of Hong Kong*  
Presented by *Enrichment Programme for Young Mathematics Talents*

### Grants

- Mar19–Mar23    **Virtual Assistant for Spacecraft Anomaly Treatment during Long Duration Exploration Missions**  
*National Aeronautics and Space Administration, Co-I (PI: Daniel Selva)*
- Apr18–Mar20    **Improving Unmanned Aerial System (UAS) Estimates Of Crop Height By Spatio-Temporal Statistics**  
*T3: Texas A&M Triads for Transformation, Co-PI (PI: Seth Murray)*
- Aug17–Jul20    **Covariate Balancing in Missing Data and Observational Studies**  
*National Science Foundation (DMS-1711952), Co-I, via a subcontract from University of Washington (PI: Kwun Chuen Gary Chan)*

Jul16–Jun20 **Collaborative Research: New Directions in Multidimensional and Multivariate Functional Data Analysis**  
*National Science Foundation (DMS-1612985 / DMS-1806063), PI*

## Publications

(\* represents student co-author)

### Journal papers

1. T. V. Nguyen\*, **R. K. W. Wong**, and C. Hegde. Provably Accurate Double-Sparse Coding. *Journal of Machine Learning Research* (2019+). To appear.
2. **R. K. W. Wong**, Y. Li and Z. Zhu. Partially Linear Functional Additive Models for Multivariate Functional Data. *Journal of the American Statistical Association* **114**(525) (2019), 406–418.
3. X. Mao\*, S. X. Chen, and **R. K. W. Wong**. Matrix Completion with Covariate Information. *Journal of the American Statistical Association* **114**(525) (2019), 198–210.
4. J. Wang\*, **R. K. W. Wong**, and T. C. M. Lee. Locally Linear Embedding with Additive Noise. *Pattern Recognition Letters* **123** (2019), 47–52.
5. **R. K. W. Wong** and X. Zhang. Nonparametric Operator-regularized Covariance Function Estimation for Functional Data. *Computational Statistics & Data Analysis* **131** (2019), 131–144.
6. I. Song\*, I. H. Cho and **R. K. W. Wong**. An Advanced Statistical Approach to Data-Driven Earthquake Engineering. *Journal of Earthquake Engineering* (2018+). To appear.
7. **R. K. W. Wong** and K. C. G. Chan. Kernel-based Covariate Functional Balancing for Observational Studies. *Biometrika* **105**(1) (2018), 199–213.
8. **R. K. W. Wong** and T. C. M. Lee. Matrix Completion with Noisy Entries and Outliers. *Journal of Machine Learning Research* **18**(147) (2017), 1–25.
9. **R. K. W. Wong**, C. B. Storlie, and T. C. M. Lee. A Frequentist Approach to Computer Model Calibration. *Journal of the Royal Statistical Society: Series B* **79**(2) (2017), 635–648.
10. **R. K. W. Wong**, V. L. Kashyap, T. C. M. Lee, and D. A. van Dyk. Detecting Abrupt Changes in the Spectra of High-Energy Astrophysical Sources. *The Annals of Applied Statistics* **10**(2) (2016), 1107–1134.
11. **R. K. W. Wong**, T. C. M. Lee, D. Paul, J. Peng, and the Alzheimer’s Disease Neuroimaging Initiative. Fiber Direction Estimation, Smoothing and Tracking in Diffusion MRI. *The Annals of Applied Statistics* **10**(3) (2016), 1137–1156. **(With Rejoinder to Discussions.)**
12. S. Han, **R. K. W. Wong**, T. C. M. Lee, L. Shen, S.-Y. R. Li, and X. Fan. A Full Bayesian Approach for Boolean Genetic Network Inference. *PLoS One* **9**(12) (2014), e115806.
13. **R. K. W. Wong**, P. Baines, A. Aue, T. C. M. Lee, and V. L. Kashyap. Automatic Estimation of Flux Distributions of Astrophysical Source Populations. *The Annals of Applied Statistics* **8**(3) (2014), 1690–1712.
14. **R. K. W. Wong**, F. Yao, and T. C. M. Lee. Robust Estimation for Generalized Additive Models. *Journal of Computational and Graphical Statistics* **23**(1) (2014), 270–289.
15. R. C. S. Lai, T. C. M. Lee, **R. K. W. Wong**, and F. Yao. Nonparametric Cepstrum Estimation via Optimal Risk Smoothing. *IEEE Transactions on Signal Processing* **58**(3) (2010), 1507–1514.
16. **R. K. W. Wong**, R. C. S. Lai, and T. C. M. Lee. Structural Break Estimation of Noisy Sinusoidal Signals. *Signal Processing* **90**(1) (2010), 303–312.

### Conference papers (refereed)

17. T. V. Nguyen\*, **R. K. W. Wong**, and C. Hegde. On the Dynamics of Gradient Descent for Autoencoders. In: *International Conference on Artificial Intelligence and Statistics (AISTATS)*. 2019.
18. T. Nguyen\*, **R. K. W. Wong**, and C. Hegde. A Provable Approach for Double-Sparse Coding. In: *AAAI Conference on Artificial Intelligence (AAAI)*. 2018.
19. Z. Liao\*, G. T. Amariuca, **R. K. W. Wong**, and Y. Guan. The Impact of Discharge Inversion Effect on Learning SRAM Power-Up Statistics. In: *IEEE Asian Hardware Oriented Security and Trust Symposium (AsianHOST)*. Vol. 1. 2017, pp.31–36.

## Software

20. **R. K. W. Wong** and K. C. G. Chan. *Package 'ATE.ncb'*. GitHub. 2018. <https://github.com/raymondkww/ATE.ncb>.
21. **R. K. W. Wong** and X. Zhang. *Package 'rkhscofun'*. GitHub. 2018. <https://github.com/raymondkww/rkhscofun>.
22. **R. K. W. Wong**, V. L. Kashyap, T. C. M. Lee, and D. A. van Dyk. *Package 'Automark'*. GitHub. 2015. <https://github.com/astrostat/Automark>.
23. **R. K. W. Wong**, F. Yao, and T. C. M. Lee. *Package 'robustgam'*. The Comprehensive R Archive Network (CRAN). 2012.

## Teaching

### Texas A&M University

- **Stat 211: Principles of Statistics I**
  - Spring 2018, Spring 2019
- **Stat 612 (graduate level): Theory of Linear Models**
  - Fall 2017, Fall 2018, Fall 2019
- **Stat 616 (graduate level): Statistical Aspects of Machine Learning I: Classical Multivariate Methods**
  - Fall 2019

### Iowa State University

- **Stat 105: Introduction to Statistics for Engineers**
  - Fall 2016
- **Stat 330: Probability & Statistics for Computer Science and Engineering**
  - Fall 2014, Fall 2015, Spring 2017
- **Stat 580 (graduate level): Statistical Computing**
  - Spring 2015, Spring 2016, Spring 2017

### University of California at Davis

- **STA 13: Elementary Statistics**
  - Summer 2012

## Research interests

- Nonparametric and semi-parametric modeling
- Regularization methods (e.g.  $\ell_1, \ell_2$  and nuclear-norm penalty)
- Statistical applications to astronomy, brain imaging, computer experiments and recommender systems
- Statistical learning