

Education

- 2015–2019 **University of California, Berkeley.**
(expected) *Ph.D. in Statistics (Biostatistics emphasis)*; Advised by Mark J. van der Laan
Research interests: Machine Learning, Artificial Intelligence, Large-Scale Data Analysis and Causal Inference.
- 2013–2014 **University of California, Davis.**
Visiting researcher in Statistics; Advised by Prabir Burman and Alexander Aue
- 2011–2015 **The University of Hong Kong.**
B.Sc. in Statistics (Magna Cum Laude), Double major in Finance
Major GPA: 3.90/4.00. Rank: top 1 / 200 in the department.

Research Experience

- 2016–present **Research Assistant in Targeted Learning**, *University of California, Berkeley.*
Advisors: **Prof. Mark J. van der Laan, Prof. Alan E. Hubbard**
- Improve the TMLE performance on high- or infinite-dimensional target parameters by constructing one-step targeting procedure.
 - Develop data adaptive test statistic for high dimensional multiple testing. Collaboration with Martyn Smith Group to perform differential expression analysis of micro-RNA under benzene exposure.
- 2015–present **Research Assistant in Statistical Imaging**, *University of California, Berkeley.*
Advisor: **Prof. Lexin Li**
- Symmetric tensor regression model enables association analysis using entire connectivity/gene-association matrix as covariate.
- 2013–2015 **Research Assistant in Semiparametric Time Series**, *University of California, Davis.*
Advisors: **Prof. Prabir Burman, Prof. Alexander Aue, Prof. Debashis Paul**
- Proposed a semiparametric time series model to capture the trend, seasonality and heteroscedasticity for nonstationary time series.
 - Established asymptotic properties of the estimators and implemented in *R*.
- 2014–2015 **Research Assistant in Nonlinear Time Series**, *University of Hong Kong.*
Advisors: **Prof. Philip L.H. Yu, Prof. Wai Keung Li**
- Develop multivariate buffered autoregression (V-BAR) models with implementation into co-integrated economic systems.
 - Funded as the most prestigious undergraduate research university-wide, only receiver in Statistics.

Publications

- [1] **Cai, Weixin** and van der Laan, Mark J., “One-step targeted maximum likelihood estimator for survival curve”, *To appear in Targeted Learning in Data Science: Causal Inference for Complex Longitudinal Studies. Springer*, 2016.
- [2] —, “One-step targeted maximum likelihood for time-to-event outcomes”, *In preparation*, 2016.
- [3] **Cai, Weixin** and Hubbard, Alan E., “Data-adaptive statistics for multiple hypothesis testing in high-dimensional settings”, *In preparation*, 2016.
- [4] Li, Lexin, **Cai, Weixin**, Zhou, Hua, Arnemann, Katelyn, and Jagust, William, “Sparse symmetric tensor regression for association modeling of brain functional connectivity”, *Submitted to NeuroImage*, 2016.
- [5] **Cai, Weixin**, Burman, Prabir, and Patrick, Joshua D., “Semiparametric heteroscedastic model for seasonal time series”, *Submitted to Journal of Time Series Analysis*, 2014.
- [6] **Cai, Weixin**, Patrick, Joshua D., and Burman, Prabir, “Oracally efficient spline smoothing of functional coefficient regression models with simultaneous confidence band”, *JSM Proceedings, Nonparametric Statistics Section*, 2014.
- [7] **Cai, Weixin**, Aue, Alexander, and Paul, Debashis, “Bias correction for high-dimensional markowitz problem under linear temporal dependence”, *In Preparation*,

- [8] **Cai, Weixin** and Yu, Philip L.H., “Multivariate buffered autoregression model”, *Senior Thesis, The University of Hong Kong*, 2015.

Awards and Honors

- 04/2016 **JSM Student Travel Awards, SF Bay Area Chapter of the ASA** .
Awarded to 4 Ph.D. students in San Francisco Bay area. The only first-year receiver
- 04/2016 **Saw Gold Medal in Statistics, University of Hong Kong.**
Awarded to the highest academic achievement graduate in Statistics
- 02/2016 **Saw See Hock Statistics Scholarship, University of Hong Kong.**
Awarded to top 1 graduate of HKU Statistics
- 2014 **Undergraduate Research Fellowship & Overseas Research Internship Award, University of Hong Kong.**
Awarded to top 8 most prestigious undergraduate researchers across all science, engineering and humanities.
- 2013 **C.V. Starr Scholarship** , *University of Hong Kong*.

Skills

Research: R, PYTHON, MATLAB, JULIA, Shell Scripting,
Programming: Spark, TensorFlow, SAS, SQL
Apps/Other: Git, Amazon EC2, L^AT_EX, Microsoft Office

Selected Talks

- 08/2016 **Symmetric Tensor Regression with Applications in Neuroimaging Data Analysis, Joint Statistics Meetings 2016**, Chicago.
- 06/2016 **Symmetric Tensor Regression with Applications in Neuroimaging Data Analysis, SFASA award invited seminar**, Stanford.
- 03/2016 **Symmetric Tensor Regression and Neuroimaging Data Analysis, BSTARS lightning talk**, Berkeley.
- 08/2014 **Oracally Efficient Spline Smoothing of Functional Coefficient Regression Models with Simultaneous Confidence Band, Joint Statistics Meetings 2014**, Seattle.

Teaching Experience

- 08/2016–
present **Teaching Assistant, Targeted Learning with Biomedical Big Data (PH 295)**, UC Berkeley.
with Prof. Mark J. van der Laan
- 01/2016–
05/2016 **Teaching Assistant, Big Data in Biostatistics**, UC Berkeley.
with Prof. Lexin Li