

Zehang Richard Li

Contact Information

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Education

- University of Washington** 2013 - Present
Ph.D. Candidate in Statistics, Machine Learning and Big Data PhD Track
Dissertation: Bayesian graphical models with limited data and external information
Advisor: Tyler H. McCormick
- The Chinese University of Hong Kong** 2009 - 2013
B.Sc. in Risk Management Science
Minor in Mathematics
- University of Washington**, visiting student Autumn 2012
University of California, Berkeley, visiting student Summer 2011

Publications

In preparation

- [1] **Zehang R Li**, Jessica Godwin, Yuan Hsiao, Bryan Martin, Jon Wakefield, and Samuel J. Clark. Changes in the spatial distribution of the Under Five Mortality Rate: small-area analysis of 122 DHS Surveys in 262 subregions of 35 Countries in Africa. 2018.
- [2] **Zehang R Li**, Tyler H McCormick, and Samuel J Clark. Verbal autopsy analysis using OpenVA. *In preparation*, 2017.

Submitted

- [1] **Zehang R Li**, Tyler H McCormick, and Samuel J Clark. Bayesian inference of latent Gaussian graphical models for mixed data. *Submitted, arXiv: 1711.00877*, 2018.
- [2] **Zehang R Li** and Tyler H McCormick. An Expectation Conditional Maximization approach for Gaussian graphical models. *Submitted, arXiv:1709.06970*, 2017.
- [3] Tsuyoshi Kuniyama, **Zehang R Li**, Samuel J Clark, and Tyler H McCormick. Bayesian factor models for probabilistic cause of death assessment with verbal autopsies. *Submitted, arXiv:1803.01327*, 2018.
- [4] Mireille Gomes, Abhishek Singh, Dinesh Kumar, Atul Budukh, Faujdar Ram, Rajesh Dikshit, Rehana Begum, Prabha Sati, Patrycja Kolpak, Richard Wen, Dhananjay W. Bansod, Sarang Pedgaonkar, Shyamsundar J. Raithatha, **Zehang R Li**, Lukasz Aleksandrowicz, Prakash Shah, Samuel J Clark, and Jha Prabhat. Computer versus Physician Coding of Cause of Deaths using Verbal Autopsies: a randomised trial of 10 589 deaths in five districts of India. *Submitted*, 2018.

Peer reviewed

- [1] Tyler H McCormick, **Zehang R Li**, Clara Calvert, Amelia C Crampin, Kathleen Kahn, and Samuel J Clark. Probabilistic cause-of-death assignment using verbal autopsies. *Journal of the American Statistical Association*, 111(515):1036–1049, 2016.
- [2] Sylvia Blom, Georges Reniers, Judith Lieber, Kobus Herbst, Clara Calvert, Jacob Bor, Till Barnighausen, Basia Zaba, **Zehang R Li**, Samuel Clark, Alison Grant, Richard Lessells, Jeffrey Eaton, and Victoria Hosegood. Tuberculosis mortality and the male survival deficit in rural South Africa: an observational community cohort study. *PLOS ONE*, to appear.
- [3] Georges Reniers, Sylvia Blom, Clara Calvert, Alexandra Martin-Onraet, Abraham J Herbst, Jeffrey W Eaton, Jacob Bor, Emma Slaymaker, **Zehang R Li**, Samuel J Clark, et al. Trends in the burden of HIV mortality after roll-out of antiretroviral therapy in KwaZulu-Natal, South Africa: an observational community cohort study. *The lancet HIV*, 4(3):e113–e121, 2017.
- [4] Ngai Hang Chan, **Zehang R Li**, and Chun Yip Yau. Forecasting online auctions via self-exciting point processes. *Journal of Forecasting*, 33(7):501–514, 2014.

Working papers

- [1] Samuel J Clark, **Zehang R Li**, and Tyler H McCormick. Quantifying the contributions of training data and algorithm logic to the performance of automated cause-assignment algorithms for Verbal Autopsy. *arXiv: 1803.07141*, 2018.
- [2] **Zehang R Li**, Tyler H McCormick, and Samuel J Clark. InterVA4: An R package to analyze verbal autopsy data. *Center for Statistics and the Social Sciences Working Paper, No.146*, 2014.
- [3] Samuel J Clark, Tyler H McCormick, **Zehang R Li**, and Jon Wakefield. InSilicoVA: A method to automate cause of death assignment for verbal autopsy. *Center for Statistics and the Social Sciences Working Paper, No.133*, 2013.

Work in Progress

“Bayesian variable and covariance selection with application to demand estimation.”
(Joint work with Matt Goldman and Matt Taddy)

“Scalable and interpretable Bayesian models for large social network evolution.”
(Joint work with Tyler McCormick and Joshua Blumenstock)

Talks and Poster Presentations

Bayesian latent Gaussian graphical model

- Topic contributed talk, Joint Statistical Meetings, Vancouver 2018

ECM approach for estimating Gaussian graphical model

- Invited poster, Joint Statistical Meetings, Vancouver 2018

Probabilistic models for verbal autopsy analysis

- Poster, UW Data Science Networking, Seattle 2016
- Poster, Joint Statistical Meetings, Chicago 2016

Software for verbal autopsy analysis

- Invited, VA in CRVS Systems international meeting, Accra, Ghana 2017
- Invited, D4H VA Working Group meeting, Columbus, Ohio 2017
- Invited, WHO VA Working Group meeting, Geneva, Switzerland 2016

Discovering structures in large social network graphs

- Contributed talk, Joint Statistical Meetings, Chicago 2016
- Contributed talk, Joint Statistical Meetings, Seattle 2015

Forecasting online auctions via self-exciting point processes

- Poster, ISI Young Statisticians' Meeting, Hong Kong 2013

Work Experience

Consultant, Vital Strategies, NY, United States Jun - Dec 2017

- Develop and improve *openVA* software with the 2016 WHO Standard VA Instrument.
- Assist the integration of verbal autopsy pipeline into civil registration and vital statistics systems.

Research Intern, Microsoft Research, Redmond, WA, United States Jun - Sept 2016

- Develop machine learning and Bayesian graphical model procedures for learning competitions patterns among large numbers of notebook and tablet products.
- Mentors: Matt Goldman and Matt Taddy

Research Intern, Census and Statistics Department Hong Kong SAR Jun - Aug 2012

- Design and build hedonic models for CPI calculations of used vehicles.

Teaching

Instructor, IUSSP 2-day short course on “Bayesian Small Area Estimation using complex survey data”, 4th Asian Population Association Conference, Shanghai, China July 2018

Instructor, IUSSP 2-day short course on “Bayesian Small Area Estimation using complex survey data”, Population Association of America Annual Meeting, Denver, United States Apr 2018

Guest Lecturer, STAT 221 Statistical Methods for the Social Sciences Spring 2018

Instructor, STAT 394 Probability I (rating: 4.3/5) Summer 2017

TA, STAT 435 Introduction to Statistical Machine Learning (rating: 4.7/5) Spring 2017

TA, STAT 390 Statistical Methods in Engineering and Science (rating: 3.5/5) Winter 2017

Software

R packages for verbal autopsy methods: InterVA4, InterVA5, InSilicoVA, Tariff, openVA

R package for child mortality methods: SUMMER

Honors and Awards

Student Paper Award, The Section on Bayesian Statistical Science of the ASA, JSM 2018

Travel Award, UW Center for Statistics and the Social Sciences (CSSS) 2016

Blalock Fellowships, UW Center for Statistics and the Social Sciences (CSSS)	2013
Mathematical Contest in Modeling (MCM), <i>Meritorious Winner</i>	2012
Dragon Crowd SCHIESSE International Exchange Scholarships	2012
Faculty of Science Dean's List	2010
Scholarship for Excellent Mainland Student (four years tuition fee and living expense)	2009 - 2013

Professional Involvement

Moderator, Statistics in the Community (StatCom)	2016 - Present
Member, New Lecturer Search Committee, Department of Statistics, UW	2017
Department Statistical Consultant	2014
Reviewer, <i>Statistica Sinica</i> , <i>Statistical Analysis and Data Mining</i>	
Professional Societies membership: American Statistical Association, Institute of Mathematical Statistics, International Chinese Statistical Association, International Society for Bayesian Analysis, Population Association Of America, International Union for the Scientific Study of Population	

Language and Skills

Programing: R, SAS, Stata, Matlab, Java, JavaScript, and L^AT_EX.

Visualization: Tableau, D3.

Languages: Mandarin (Native), Cantonese (Basic), English(Fluent), and Spanish (Elementary)