

Linqing
(Waverly) Wei

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WaverlyWei

(310) 962-6530

Linqing(Waverly) Wei

Education

2017 - 2022, University of California, Berkeley

PhD in Biostatistics

2013 - 2017 , University of California, Los Angeles

B.S. in Computer Science(Bioinformatics Concentration)

B.S.in Biochemistry

GPA

3.80/4.00

Software Development Skills

Programming

- R
- SAS
- UNIX
- SQL
- Python

Research and Work Experiences

May 2019 – Present , Streaming Data and Online Learning Research, UC Berkeley, Graduate Student Researcher

- Designed non-parametric online learning method applied under large scale streaming data setting
- Constructed robust classification and prediction algorithms dealing with high-dimensional and time-varying covariates correlation which can be applied on analyzing complex financial data, website traffic data,etc.

Jan 2018 – Present , Precision Medicine Research, UC Berkeley & UCSF, Graduate Student Researcher

- Collaborated with Zuckerberg San Francisco General Hospital Trauma Center to design Optimal Treatment Algorithms for trauma patients
- Conducted model and feature selection using statistical machine learning methods to solve high-dimensional yet finite sample problem
- Made statistical inference and estimation under the causal inference framework to evaluate the predictive power of current labs and the effectiveness of treatments

May 2018 – Oct 2018 , The Wallace Center Big Data Project, UC Berkeley & Google Trends Team, Graduate Student Researcher

- Constructed and Developed pipeline methodologies using python platform to analyze Google Search Traffic Data to learn about the demand and availability of reproductive health searching behaviors
- Designed survey sampling methodology to capture reliable and stable data
- Conducted statistical analysis and inference based on Google Search Data to detect significant temporal and spatial searching variations

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**Aug 2018 – Present , Staistical Consulting Group, UCBerkeley, Statis-
tical Consultant**

- Provided experimental design suggestions and proposed feasible sta-
tistical models for Berkeley Research Groups
- Helped clients to detect the underlying statistical issues within their
research or computation frameworks
- Conducted case studies for research groups from diverse backgrounds:e.g.
law, economics, aerospace engineering, geophysics,etc.

**May 2018 – Present , SF Violence Research, UCBerkeley, UCSF & UCLA,
Graduate Student Researcher**

- Conducted non-parametric variable importance selection to analyze
the major factors affect SF premature death and violence across
neighborhoods
- Utilized collaborative targeted maximum likelihood estimator to eval-
uate the causal effects of important variables
- Modeled the statistical problem under a finite population and clus-
tering framework
- Conducted geospatial mapping analysis of the intensity and contin-
gency of the causal effects

Apr 2016 – Jun 2017 , Vondriska Lab, UCLA, Undergrad Researcher

- Constructed computational model to analyze the methylation rate
between TAD boundaries and within TAD regions
- Built lncRNA database using R language for cardiovascular proteomics
analysis
- Conducted individual project on analyzing enhancer methylation
rate across 176 strains and 20 chromosomes by programming in
R
- Created 3D plots based on computed methylation results using vrml-
gen tool to assist statistical analysis
- Actively discussed results during weekly meetings with lab members
as part of the large enhancer project
- Detected statistically significant variation patterns of methylation
rates on several chromosomes

**Jan 2015 – June 2015, UCLA Medical Center, Epilepsy Monitoring Unit,
Neurology Department Interdepartmental Epilepsy Onset Research Project
, Undergrad Researcher**

- Extracted IEEG data using Matlab and incorporated into database
- Built large epilepsy seizure onset database using clinical data
- Interpreted and identified significant seizure onset zone based on
generated database
- Contributed the database for epilepsy analysis and published a paper
as the co-author

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Applied Projects

Image Reconstruction

- Predicted the responses in 20 voxels located in the region of the brain responsible for visual functions
- Applied dimension reduction technique and constructed prediction models using Lasso, L2-boosting, Random Forest to predict the brain responds.

Dialectometric Analysis using Unsupervised Learning Method

- Investigated unsupervised learning and dimensional reduction to Harvard Dialect Survey to visualize the geographical relationship of questions and answers across the U.S.
- Applied spectral clustering, k-medoids model and interactive mapping to find the localized dialectometric behaviors
- Used parallel computing to facilitate the computation process

MedHack , Johns Hopkins University

- Designed “MedEx” medical informatics system, which involves cheaper way of patients’ data collection and bidirectional interaction between patients and clients, by collaborating with team
- Constructed “Interactive Medical Record” User Interface including add-on features using Swift Language
- Designed and Created “MouseTracking” Model which directs patients’ interaction with medical record in a numerical form to physicians
- Presented final product to multiple medical technology companies

Haplotype Phasing Optimization

- Designed own phasing algorithm based on hashing and clustering, used R as the primary language
- Achieved optimal hashing results compared with classical EM and Greedy Algorithms

Genetic Algorithm R Package

- Constructed an R package to implement the genetic algorithm for variable selection in linear regression and general linear models.
- Allowed users to provide own datasets, objective function and linear model formulas.

Wikipedia Traffic Data Analysis

- Used Spark and SQL to process 2008 Wiki Datasets and collected results across 960 files using parallel computing method.
- Analyzed political trend based on user hits and generated plots to visualize the summarized data.

Honors and Awards

JSM Student Travel Awards, SF Bay Area Chapter of the ASA

- Awarded to 4 Ph.D. students in San Francisco Bay area

Conference Travel Awards, UC Berkeley Graduate Division

- Awarded to graduate students presenting paper at professional conferences

Dean’s Honor List, UCLA

- Winter 2015, Spring 2015, Spring 2016 for earning a 3.75 grade-point average in any one term with at least 12 graded units and no grade of NP.

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Talks

[Symposium on Data Science and Statistics, Bellevue, 2019](#)

- A Data-Adaptive Targeted Learning Approach of Evaluating Viscoelastic Assay Driven Trauma Treatment Protocols

[SFASA award invited seminar, San Francisco, 2019](#)

- Using Targeted Learning Methods to Evaluate the Impact of Blood Product Ratios on Achieving Hemostasis as Measured by TEG/ROTEM

[Joint Statistical Meeting, Denver, 2019](#)

- A Data-Adaptive Targeted Learning Approach of Evaluating Viscoelastic Assay Driven Trauma Treatment Protocols

Programming Certification

[SAS Global Certification](#)

- SAS Base Programming for SAS 9 Certification
- SAS Advanced Programming for SAS 9 Certification

Publications

- **Wei LQ**, *A Data-Adaptive Targeted Learning Approach of Evaluating Viscoelastic Assay Driven Trauma Treatment Protocols*, In Preparation, 2019
- **Wei LQ**, *Non-Parametric Variable Importance Selection in Violence-related Factors*, In Preparation, 2018
- **Wei LQ**, Hubbard, A, *Association of Formaldehyde Exposure with DNA Methylation Variability in Human Genomes*, In Preparation, 2019
- Weiss SA, Orosz I, Moy S, **Wei LQ**, Van 't Klooster MA, Knight RT, Harper RM, "Ripples on spikes show increased phase-amplitude coupling in mesial temporal lobe epilepsy seizure onset zones", *Epilepsia*, 2016

Relevant Coursework

- Statistics: Theoretical Statistics Models, Causal Inference, Statistical Computing, Probability Theory
- EECS: optimization in engineering, introduction to algorithms