Wenjia Wang

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EDUCATION BACKGROUND

University of California, Davis **09/2018-12/2019(anticipated)**

MS in Statistics ***Overall GPA:* 3.91/4**

East China Normal University **09/2013-07/2017**

BS in Mathematics and Applied Math ***Major GPA*: 3.85/4**

Statistics Courses: Linear Statistical Models, Mathematical Statistics, Applied Stochastic Processes, Probability Theory, Computational Statistics, Statistical Methods in Machine Learning, etc.

Math Courses: Mathematical Analysis, Advanced Algebra, Real Analysis, Numerical Analysis, ODE, Mathematical Modeling with Experiments (Optimization), Abstract Algebra, Topology, etc.

Honors & Scholarships

Excellent Graduate of East China Normal University **07/2017**

First-class & Second-class National Scholarship: for top 3% and 10% students respectively. **2014 & 2015**

University-level First Prize of Daxia Fund Project **2015**

Second Prize in National Olympic Biology Competition **2012**

Projects & RESEARCH EXPERIENCES

Research of Neurons Extraction from in-vivo Calcium Imaging Data **08/2019-present**

- Independent study; Advisor: Shizhe Chen
- Research papers of unsupervised basis learning approaches to extracting neurons from calcium imaging data
- Explore structures of different types of imaging data, including large scale, dense population and dendrites imaging data, theoretically analyze the efficiency and drawbacks of those popular methods on these data sets and verify assumptions by designing and conducting simulations
- Improve methods to better handle large-scale imaging data by efficiently removing neuropil/out-of-focus contamination, and propose approaches to extract subcellular compartments: dendrites, spines and axonal boutons

Patient Self-evaluation System for Medicine Recommendation (Python) **05/2019-06/2019**

- Construct binary classifier based on realistic data recording patients situations from a pharmacy company
- Preprocessing the raw data, involving various imputation methods applied to categorical and numerical predictors
- Considering the binary-valued sparse data structure, similar to NLP, non-linear binary classifiers are applied and tuned: kernel SVM, random forest, (tree based) Adaboost, and feed forward neural network
- Evaluate models based on F1 score, ROC, PR curves, analyze the reasonability of tuned parameters for each model, research their bias-variance trade off and compare space and time complexity

Analysis of House Rentals Posts from Craigslist Website (R) **11/2018-12/2018**

- Analyze house features in 4 areas, explore factors of price and provide the best choice based on custom's demand
- Scrape 45847 posts from Craigslist, preprocess the messy data by cleaning and extracting features from texts
- Perform data mining, including analyzing multicorrelation among the 19 features, exploring their relationships to geographical characteristics of rental markets, and making further inferences by combining with demographic data
- Regress to rental prices based on factor analysis, visualize results and provide house recommendations

Numerical Algorithms of Solving Linear Least Squares Problem (MATLAB) **12/2016-04/2017**

- Research in algorithms of tensor decomposition, matrix factorization involving SVD and Cholesky decomposition
- Implement SOR, Krylov subspace method such as CG and preconditioning methods in Matlab
- Compare algorithms in terms of numerical stability and convergence by simulated matrices of varied ill conditions

Backpack Inventory Management (MATLAB) **05/2017-06/2017**

- Apply Markov Chains to build a stochastic model and compute the stationary distribution of replenishment boundary value to optimize long-term profits based on distribution of daily sales

PROFESSIONAL SKILLS

Programming Language: R, MATLAB, Python (scikit-learn, TensorFlow, Keras, PyTorch), SAS, Bash, SQL

Computer Vision: Image processing, Feature extraction, Segmentation and Classification

Machine Learning: Convolutional Neuronal Network, Recurrent Neuronal Network, Descision Tree, Clustering