Ziteng Wang

CONTACT INFORMATION

Room 3654, Academic Building
HKUST, Kowloon, Hong Kong

Email: wangzt2012@gmail.com
Mobile: (+86)188-1158-5829

WORK EXPERIENCES

Hong Kong University of Science and Technology — Jan. 2015 to Jul. 2015
Worked as an Research Assistant in Department of Computer Science & Engineering

- Proposed an efficient and scalable second-order stochastic algorithm for variational inference for generative model. Developed an accurate matching method to locate similar patterns in candlestick charts.

Wecash(a start-up company), Beijing, China — Aug. 2014 to Oct. 2014
Worked as an Algorithm Engineer in Quantitative Modelling Group

- Designed various algorithms for missing data imputation. Used classification, clustering, and feature selection methods to credit customs to control risk. Proposed a method for recredit to improve the assessment system.

EDUCATION

Peking University, Dept. of Machine Intelligence, EECS, — Sep. 2011 to Jul. 2014

- MS in Pattern Recognition and Machine Learning.

Sichuan University, College of Mathematics, — Sep. 2007 to Jul. 2011

- BS in Mathematics and Applied Mathematics.

HONORS AND AWARDS

ICML Volunteer Award	2014
NIPS Student Travel Award	2013
The Bank of Tokyo-Mitsubishi UFJ Award (5%)	2013
Kebo Award in College of Mathematics (5%)	2010
Innovation Talent Award (2%)	2010
The Second Prize Scholarship (10%)	2009
National First Prize in Contemporary Undergraduate Mathematical Contest in Modeling(CUMCM)(1.5%)	2009

PUBLICATIONS

Kai Fan*, Ziteng Wang*, Jeff Beck, James Kwok, Katherine Heller. *Fast Second-Order Stochastic Backpropagation for Variational Inference.* in *NIPS*, 2015 (* means equal contribution).

Ziteng Wang, Chi Jin, Kai Fan, Jiaqi Zhang, Junliang Huang, Yiqiao Zhong, Liwei Wang. *Efficient and Differentially Private Data Releasing for Smooth Queries. Journal of Machine Learning Research, To appear, 2015.*

Chi Jin, Ziteng Wang, Junliang Huang, Yiqiao Zhong, Liwei Wang. *Differentially Private Data Releasing for Smooth Queries with Synthetic Database Output.* arXiv.org/abs/1401.0987

Ziteng Wang, Kai Fan, Jiaqi Zhang, Liwei Wang. *Efficient Algorithm for Privately Releasing Smooth Queries.* in *NIPS*, 2013

RESEARCH EXPERIENCES

Matching Similar Patterns in Candlestick Charts — Jan. 2015 to Jul. 2015
Worked as a research assistant to make an automatic trading system for an investment company under the supervision of Prof. James Kwok.

- Contribution: Proposed a better algorithm (combining the fast dynamic time warping algorithm and the fuzzy method) to match similar patterns in financial

time series dataset. Implemented and tuned the algorithm with Matlab. Converted Matlab codebase into C++ and Qt code to develop an application, and tested it with real datasets.

Fast Second-Order Stochastic Backpropagation Jan. 2015 to Jun. 2015

- By generalizing the gradient computation in stochastic backpropagation via a reparametrization trick, proposed an approach to obtain curvature information with lower complexity, thus making the Newton's method both scalable and efficient (the first work to apply curvature information on non-conjugate generative model). Deduced a novel variance bound and a faster sample mean convergence rate. Accepted by NIPS.

Data Privacy on Smooth Query Apr. 2013 to Jun. 2014

Worked as a research assistant under the supervision of Prof. Liwei Wang.

- Contribution: Approximated *K-smooth* linear queries by using trigonometric polynomials(Jackson Kernel) as the basis functions. Proved the constant upper bound for linear coefficients and adopted the sparse grid algorithm to numerically compute the coefficients. This theoretical work was accepted by NIPS.
- Proposed an efficient method to learn the distribution of the original database by using trigonometric polynomials as basis. Transferred it to a LP problem and solved it with Cplex toolbox. Modified the Private Subspace Iteration algorithm to improve the efficiency. Source codes are available. Accepted by JMLR.

Information Retrieval:Theoretical Analysis of NDCG Aug. 2012 to Jan. 2013

- Surveyed asymptotics, including convergence and asymptotic normality of many traditional ranking measures, especially for linear rank statistics and measures that are U-statistics. Proved the consistent distinguishability results of NDCG.

Label Complexity of Agonistic Active Learning Apr. 2011 to Jun. 2011

- Studied the disagreement coefficient of classification problem where the classification boundary is smooth. Gave the tight upper bound and lower bound of disagreement coefficient so as to uniform them.

Representation and Inference for Graphical Models Mar. 2011 to Jul. 2011

- Surveyed the representation of dependence in Bayesian Network and Markov Network; and investigated various ways of inference including variable elimination, clique trees, particle-based approximate/MCMC and MAP.

RELATED BACKGROUND

Book Reviewer

- Chinese edition of *Probabilistic Graphical Models*(Koller & Friedman,2009). Chapter 9, Chapter 10 and Chapter 12.

TEACHING EXPERIENCE

Teaching Assistant

- Fall 2012: Introduction to Artificial Intelligence, TA for Prof. Hongbin Zha
- Spring 2013: Information Theory, TA for Prof. Liwei Wang

SKILLS

Programming Languages

- C++/C, Python, Mathematica, Qt, MATLAB, LaTeX, HTML

Operating Systems

- Windows, OS X, Linux