Shandian Zhe

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West Lafayette, IN, USA   Web: http://www.cs.purdue.edu/homes/szhe/index.html

Research Interests

Probabilistic machine learning, Bayesian nonparametrics, approximate inference, probabilistic graphical models, large-scale machine learning, tensor/matrix factorization, health informatics, computational biology

Education

Purdue University   West Lafayette, IN, USA
Ph.D. in Computer Science   *2012-2017*

Chinese Academy of Sciences   Beijing, China
M.S. in Computer Science   *Jan. 2011*

Beihang University   Beijing, China
B.E. in Computer Science and Technology   *July 2007*

Publications

Journal Articles

DEIsoM: A Hierarchical Bayesian Model for Identifying Differentially Expressed Isoforms Using Biological Replicates.
Hao Peng, Yifan Yang, Shandian Zhe, Jian Wang, Michael Gribskov and Yuan Qi.
Bioinformatics, Oxford, 2017 btx357. doi: 10.1093/bioinformatics/btx357.

Joint Network and Node Selection for Pathway-based Genomic Data Analysis.
Shandian Zhe, Syed A.Z. Naqvi, Yifan Yang and Yuan Qi.
Bioinformatics, Oxford, Volume 29, Issue 16, Page 1987-1996.

Association Discovery and Diagnosis of Alzheimer's Disease with Bayesian Multiview Learning.
Zenglin Xu*, Shandian Zhe*, Yuan Qi and Peng Yu (* equal contribution).
Journal of Artificial Intelligence Research, Volume 56, Page 247-268.

Conference Papers

Asynchronous Distributed Variational Gaussian Processes for Regression.
Hao Peng, Shandian Zhe, Xiao Zhang, Yuan Qi.
Proceedings of the 34th International Conference on Machine Learning (ICML), 2017. (Acceptance rate: 25%)

Distributed Flexible Nonlinear Tensor Factorization.
  Shandian Zhe, Kai Zhang, Pengyuan Wang, Kuang-chih Lee, Zenglin Xu, Yuan Qi and Zoubin Ghahramani.
  Proceedings of the 30th Annual Conference on Neural Information Processing Systems (NIPS), 2016. (Acceptance rate: 23%)

Annealed Sparsity via Adaptive and Dynamic Shrinking.
  Kai Zhang, Shandian Zhe, Chaoran Cheng, Zhi Wei, Zhengzhang Chen, Haifeng Chen, Guofei Jiang, Yuan Qi and Jieping Ye.
  Proceedings of the 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 2016. (Acceptance rate: 18%)

DinTucker: Scaling up Gaussian Process Models on Large Multidimensional Arrays.
  Shandian Zhe, Yuan Qi, Youngja Park, Zenglin Xu, Ian Molloy and Suresh Chari.
  Proceeding of the 30th AAAI Conference on Artificial Intelligence (AAAI), 2016. (Acceptance rate: 26%)

Fast Laplace Approximation for Sparse Bayesian Spike and Slab Models.
  Syed Abbas Z. Naqvi, Shandian Zhe, Yuan Qi, Yifan Yang and Jieping Ye.
  Proceedings of the 25th International Joint Conference on Artificial Intelligence (IJCAI), 2016. (Acceptance rate: $< 25\%$)

Scalable Nonparametric Multiway Data Analysis.
  Shandian Zhe, Zenglin Xu, Xinqi Chu, Yuan Qi and Youngja Park.
  Proceedings of the 18th International Conference on Artificial Intelligence and Statistics (AISTATS), 2015. (Acceptance rate: 27%)

Sparse Bayesian Multiview Learning for Simultaneous Association Discovery and Diagnosis of Alzheimer's Disease.
  Shandian Zhe, Zenglin Xu, Yuan Qi and Peng Yu.
  Proceedings of the 29th AAAI Conference on Artificial Intelligence (AAAI), 2015. (Acceptance rate: 27%)

Bayesian Maximum Margin PCA.
  Changying Du, Shandian Zhe, Fuzhen Zhuang, Yuan Qi, Qing He and Zhongzhi Shi.
  Proceedings of the 29th AAAI Conference on Artificial Intelligence (AAAI), 2015. (Acceptance rate: 27%)

Joint Association Discovery and Diagnosis for Alzheimer's Disease by Supervised Heterogeneous Multiview Learning.
  Shandian Zhe, Zenglin Xu, Yuan Qi and Peng Yu.
  Proceedings of the 19th anniversary of Pacific Symposium on Biocomputing (PSB), 2014.

Workshop Papers

Scalable Nonparametric Tensor Analysis
  Shandian Zhe
  Proceedings of the 21st AAAI/SIGAI Doctoral Consortium.

Online Spike-and-slab Inference with Stochastic Expectation Propagation.
  Shandian Zhe, Kuang-chih Lee, Kai Zhang and Jennifer Neville.
  Proceedings of Workshop on Advances in Approximate Bayesian Inference, Advances in Neural Information Processing Systems (NIPS), 2016.

Posters and Presentations

Large-Scale Bayesian Learning for Hidden Relationship Discovery.
  Job talk, University of Arkansas, George Mason University, University of Utah, 2017.

Large-Scale Bayesian Learning for Nonlinear Tensor Analysis.
  Job talk, University of Edinburgh, 2017.

Scalable Bayesian Sparse Learning and Nonparametric Multiway Data Analysis.
  Google PhD Fellowship Summit, Mountain View, CA, 2016.

Online Bayesian Sparse Learning for Click-through-rate Prediction.
  Yahoo! Ad Science and Data team, Sunnyvale, CA, 2016.

Distributed Nonlinear Tensor Factorization with SPARK.
  Yahoo! Science Week, Sunnyvale, CA, 2015.

Scalable Nonparametric Tensor Analysis.
  Machine Learning and Application Seminar, Computer Science Department, Purdue University, West Lafayette, IN, 2015.

Dynamic Shrinking Adaptive LASSO for Multitask Multivariate Time Series Analysis.
  NEC Laboratories, Princeton, NJ, 2014.

Multiview Learning for Alzheimer's Disease Study
  NEC Laboratories, Princeton, NJ, 2014.

Sparse Bayesian Multiview Learning for Simultaneous Association Discovery and Diagnosis of Alzheimer's Disease.
  Role of Machine Learning in Transforming Healthcare workshop at International Conference on Machine Learning, 2013.

Awards and Affiliations

Awards

  AAAI/SIGAI 2017 Doctoral Consortium Scholarship

  Google PhD Fellowship for Machine Learning 2016

  AAAI 2015 Outstanding Student Paper Honorable Mention

  Pacific Symposium on Biocomputing 2014 Travel Award

Affiliations

  International Society for Bayesian Analysis

Service

Professional Reviewing

  International Conference for Machine Learning (ICML) 2014, 2015

  Annual Conference on Neural Information Processing Systems (NIPS) 2015, 2016, 2017

Journal of Machine Learning Research (JMLR)

IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)

IEEE Transactions on Knowledge and Data Engineering (TKDE)

Program Committees

The 2nd Workshop on Scalable Machine Learning: Theory and Applications, IEEE International Conference on Big Data, 2014

The 2nd International Conference on Data Analytics, 2013

The Third IEEE International Conference on Multimedia Big Data, 2017

KDD 2017 workshop on AdKDD and TargetAD

Employment

01/2012 — present
    Research Assistant, Purdue University, West Lafayette, IN.
    Design, implement and conduct experiments in Bayesian learning

05/2016 — 08/2016
    Technique Intern, Yahoo! Ad Science and Data team
    Develop high-dimensional feature selection algorithm for click-through-rate prediction

05/2015 — 08/2015
    Research Intern, Yahoo! Labs
    Design and implement scalable, nonlinear tensor factorization models

05/2014 — 08/2014
    Research Intern, NEC Laboratories America, Princeton, NJ
    Develop algorithms to analyze multivariate time series data