Wenqi Wang

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Research Interest

I work on tensor networks, and its application in machine learning and deep learning.

Education

Purdue University, School of Industrial Engineering — West Lafayette, IN, U.S.
Ph.D. in Operation Research — *Aug, 2013 – Aug, 2018*
Thesis: Multi-dimensional data analytics and deep learning via tensor networks.
Minor in Computational Science and Engineering (CS&E) Program — Jan, 2016 – May, 2018

Fudan University, Department of Physics — Shanghai, China
B.S. in Physics — *Sep, 2009 – July, 2013*
UC Berkeley Extension Concurrent Enrollment Program — Aug, 2012 – Dec, 2012

Experience

Technicolor Research AI Lab — Los Altos, CA, U.S.
Research Internship in Optimization Techniques for Deep Learning — *Jun, 2017 – Sep, 2017*
- Mentors: Yifan Sun and Brian Eriksson
- Proposed a Tensor Ring Networks to compress the state-of-the-arts neural networks (CVPR2018).
- Proposed a new efficient Tucker Ring factorization to analyze multi-dimensional data.

FREEs Fund — Beijing, China
Investment Analyst Internship — *Dec, 2016 – Jan, 2017*
- Mentors: Xiang Gao
- Assisted investment managers to conduct industrial analysis in big data and artificial intellegence.

School of Industrial Engineering, Purdue University — West Lafayette, IN
Teaching Assistant for Stochastic Process — *Aug, 2015 – May. 2017*
- Prepared course contents and exercise problems in Discrete Time Markov Chain, Continuous Time Markov Chain, Queuing Theory, and Brownian Motion.

Publication

[1] **Wenqi Wang**, Brian Eriksson, Yifan Sun, Wenlin Wang, Vaneet Aggarwal, Wide-compression: Tensor Ring Nets. IEEE Conference on Computer Vision and Pattern Recognition **(CVPR 2018)**

[2] Wenlin Wang, Zhe Gan, **Wenqi Wang**, Dinghan Shen, Jiaji Huang, Wei Ping, Sanjeev Satheesh, Lawrence Carin, Topic Compositional Neural Language Model. Artificial Intelligence and Statistics **(AISTATS 2018)**

[3] **Wenqi Wang**, Vaneet Aggarwal, Shuchin Aeron, Tensor Train Neighborhood Preserving Embedding. IEEE Transactions on Signal Processing **(TSP 2018)**

[4] **Wenqi Wang**, Vaneet Aggarwal, Shuchin Aeron, Efficient Low Rank Tensor Ring Completion. IEEE International Conference on Computer Vision **(ICCV 2017)**

[5] **Wenqi Wang**, Vaneet Aggarwal, Shuchin Aeron, Principal Component Analysis with Tensor Train Subspace (arXiv:1803.05026)

[6] **Wenqi Wang**, Vaneet Aggarwal, Shuchin Aeron, Tensor Completion by Alternative Minimization under Tensor Train (TT) Model (arXiv:1609.05587)

[7] Wenlin Wang, Changyou Chen, **Wenqi Wang**, Piyush Rai, Lawrence Carin, Earliness-Aware Deep Convolutional Networks for Early Time Series Classification (arXiv:1611.04578)

[8] **Wenqi Wang**, Vaneet Aggarwal, Shuchin Aeron, Unsupervised Clustering Under the Union of Polyhedral Cones (UOPC) Model. Pattern Recognition Letters **(PRL 2017)**

[9] **Wenqi Wang**, Vaneet Aggarwal, Shuchin Aeron, On Deterministic Conditions for Subspace Clustering Under Missing Data. IEEE International Symposium on Information Theory **(ISIT 2016)**

[10] Yaowu Hu, Seunghyun Lee, Prashant Kumar, Qiong Nian, **Wenqi Wang**, Joseph Irudayaraj and Gary J. Cheng. Water flattens graphene wrinkles:laser shock wrapping of graphene onto substrate-supported crystalline plasmonic nanoparticle arrays (**Nanoscale. 2015**)

[11] Dong Lin, Qiong Nian, Biwei Deng, Shengyu Jin, Yaowu Hu, **Wenqi Wang**, and Gary J. Cheng.Three-Dimensional Printing of Complex Structures: Man Made or toward Nature? (**ACS Nano, 2014**)

[12] Y. L. Chen, Y. J. Ma, D. D. Chen, **W. Q. Wang**, K. Ding, Q. Wu, Y. L. Fan, X. J. Yang, Z. Y. Zhong, F. Xu, and Z. M. Jiang. Effect of graphene on photoluminescence properties of graphene/GeSi quantum dot hybrid structures. (**Appl. Phys. Lett. 2014**)

Presentation

[1] Multi-dimensional data analytics and deep learning via tensor networks. Yahoo, New York, NY, USA Apr. 2018

[2] Multi-dimensional data analytics and deep learning via tensor networks. Computational Interdisciplinary Graduate Programs (CIGP) Symposium, Purdue University, West Lafayette, IN, USA Apr. 2018

[3] Tensor Train Subspace Embedding, SIAM Computational Science and Engineering Student Conference (CSESC), Purdue University, West Lafayette, IN, USA Mar. 2017

[4] National Investment Banking Competition (NIBC) Final Round Presentation, Vancouver, BC, Canada Feb. 2016

Awards

Bilsland Dissertation Fellowship, Purdue University	2017-2018
Purdue Krannert Finance Club Travel Awards, Purdue University	Mar. 2016
Honored Graduation Awards, Fudan University	Jul. 2013
National Mount Everest Program Fellowship, Fudan University	Sep. 2012
TOSHIBA Scholarship, Fudan University	2012-2013
People's Scholarship 2nd Prize, Fudan University	2009-2012

Skills

Technical expertise: Python(Tensorflow), C/ C++, Matlab, Emacs, Linux.

Certificate: Chartered Financial Analyst (**CFA**) Level 1, Financial Risk Manager (**FRM**) Level 1.

Languages: Mandarin *(mother tongue)*, English *(professional proficiency)*.

Related Course

Mathematics: Mathematics Finance I, Mathematics Finance II, Stochastic Process, Theoretical Foundation in Optimization, Mathematics of Data Science, Introduction to Probability, Linear Programming, Numerical Analysis

Machine Learning: Artificial Intelligence, Pattern Recognition, Bioinformatics Algorithms

Economics and Finance: Microeconomics, Macroeconomics, Monetary Banking, Corporate Finance

Reference

Vaneet Aggarwal (E-mail: vaneet@purdue.edu; Tel: +1(765)496-0398)

- Assistant Professor, School of Industrial Engineering, Purdue University
- Prof.Aggarwal is my graduate advisor at Purdue University.

Shuchin Aeron (E-mail: shuchin@ece.tufts.edu; Tel: +1(617)627-4653)

- Associate Professor, Department of Electrical and Computer Engineering, Tufts University
- Prof.Aeron is my research collaborator.

Yifan Sun (E-mail: yifan.sun@technicolor.com)

- Researcher, Technicolor Research AI Lab
- Dr.Sun is my mentor during my internship at Technicolor Research.

Brian Eriksson (E-mail: eriksson@adobe.com; Tel: +1(612)860-7915)

- Area Lead, Technicolor Research AI Lab
- Dr.Eriksson is my mentor during my internship at Technicolor Research.