Dr. Bo Wang **Assistant Professor, University of Toronto**

BASIC INFORMATION

Faculty Member of Vector Institute mobile: 650-670-7736
AI Lead at Peter Munk Cardiac Centre e-mail: bowang87@stanford.edu
google scholar profile: https://scholar.google.ca/citations?user=37FDILIAAAAJ&hl=en

RESEARCH INTERESTS

Machine Learning, Computational Biology.

EDUCATION

Stanford University, USA, 09/2013 - 06/2017
Ph.D. in Department of Computer Science. Advisor: Prof. Serafim Batzoglou

University of Toronto, Canada, 09/2010 - 03/2012
M.S. in Department of Computer Science. Advisor: Prof. Wayne Enright

Huazhong University of Science and Technology, China, 09/2006 - 06/2010
B.S. in Electronics and Information Engineering

WORK EXPERIENCE

Senior AI Consultant @ Genentech, Inc., USA, 02/2018 - 09/2018
Guided the AI team with applications in clinical trials and computational drug design.
Machine Learning Lead@ Hikvision Research Insititute, USA 09/2017 - 08/2018
Founded and led the machine learning team for cutting-edge AI research.
Staff Deep Learning Scientist @ Illumina, Inc., USA 06/2017 - 09/2017
Supervised a team of research interns focusing on deep learning research for DNA Sequencing.
Senior Machine Learning Scientist @ Slyce,Inc., Canada 09/2014 - 09/2015
Designed and implemented the core deep learning visual-search system in launched products.
Data Scientist @ Sickkids Hospital, Canada 03/2012 - 09/2013
Designed a novel network-based algorithm improving cancer diagnosis and survival prediction.

SELECTED PUBLICATIONS

TOP JOURNALS

1. Bo Wang, Armin Pourshafeie, Marinka Zitnik, Junjie Zhu, Carlos D Bustamante, Serafim Batzoglou, Jure Leskovec. Network Enhancement: a general method to denoise weighted biological networks. **Nature Communications**, 2018.
2. Bo Wang, Daniele Ramazzotti, Luca De Sano, Junjie Zhu, Emma Pierson, Serafim Batzoglou. SIMLR: A Tool for Large Scale Genomic Analyses by Multiple Kernel Learning. **Proteomics**, 2018.
3. Daniele Ramazzotti, Avantika Lal, Bo Wang, Serafim Batzoglou, Arend Sidow. Multi-omic tumor data reveal diversity of molecular mechanisms underlying survival. **Nature Communications**, 2018.
4. Marinka Zitnik, Francis Nguyen, Bo Wang, Jure Leskovec, Anna Goldenberg, Michael M Hoffman. Machine Learning for Integrating Data in Biology and Medicine: Principles, Practice, and Opportunities. **Information Fusion**, 2018.
5. Bo Wang, Junjie Zhu, Emma Pierson, Serafim Batzoglou. Visualization and analysis of single-cell RNA-seq data by kernel-based similarity learning. **Nature Methods**, 2017.
6. Bo Wang, Lin Huang, Yuke Zhu, Anshul Kundaje, Serafim Batzoglou, Anna Goldenberg. Vicus: Exploiting local structures to improve network-based analysis of biological data. **PLoS Comp. Biology**, 2017
7. Bo Wang, John K Tsotsos. Dynamic Label Propagation for Semi-supervised Multi-class Multi-label Classification. **Pattern Recognition**, 2016
8. Lin Huang, Bo Wang, Ruitang Chen, Sivan Bercovici, Serafim Batzoglou. Reveel: large-scale population genotyping using low-coverage sequencing data. **Bioinformatics**, 2016
9. Nadya Andini, Bo Wang. Microbial Typing by Machine Learned DNA Melt Signatures. **Scientific Reports**, 2016
10. Bo Wang, Aziz M Mezlini, Feyyaz Demir, Marc Fiume, Zhuowen Tu, Michael Brudno, Benjamin Haibe-Kains, Anna Goldenberg. Similarity Network Fusion: a fast and effective method to aggregate data from multiple domains. **Nature Methods**, 2014
11. Bo Wang, Wayne Enright. Parameter Estimation for ODEs Using a Cross-Entropy Approach. **SIAM Journal on Scientific Computing (SISC)** , 2013.

12. Aziz M. Mezlini, Bo Wang, Amit Deshwar, Quaid Morris, Anna Goldenberg.Identifying cancer specific functionally relevant miRNAs fromgene expression and miRNA-to-gene networks using regularizedregression. **PLOS ONE**, 2013
13. Xiang Bai, Bo Wang, Cong Yao, and Zhuowen Tu. Co-transduction for Shape Retrieval, **IEEE Transactions on Image Processing (TIP)**, 2012.
14. Wei Shen,Bo Wang, Yueming Wang, Xiang Bai, Longin Jan Latecki. Face Identification UsingReference-based Features with Message Passing Model. **Neurocomputing**, 2012.

Top Conferences

15. Siyuan Qiao, Wei Shen, Zhishuai Zhang, Bo Wang, Alan Yuille. Gradually updated neural networks for large-scale image recognition. **International Conference on Machine Learning (ICML)**, 2018
16. Siyuan Qiao, Wei Shen, Zhishuai Zhang, Bo Wang, Alan Yuille. Deep Co-Training for Semi-Supervised Image Recognition. **European Conference on Computer Vision (ECCV)**, 2018
17. Zhishuai Zhang, Siyuan Qiao, Cihang Xie, Wei Shen, Bo Wang, Alan L Yuille. Single-Shot Object Detection with Enriched Semantics. **IEEE Conference on Computer Vision and Pattern Recognition (CVPR)**, 2018
18. Wei Shen, Yilu Guo, Yan Wang, Kai Zhao, Bo Wang, Alan Yuille. Deep Regression Forests for Age Estimation. **IEEE Conference on Computer Vision and Pattern Recognition (CVPR)**, 2018.
19. Bo Wang, Junjie Zhu, Oana Ursu, Armin Pourshafeie, Serafim Batzoglou, Anshul Kundaje. Unsupervised learning from noisy networks with applications to Hi-C data. **Neural Information Processing Systems (NIPS)** , 2016.
20. Bo Wang,Zhuowen Tu, John Tsotsos. Dynamic Label Propagation for Semi-Supervised Multi-Class Multi-Label Classification.**International Conference on Computer Vision (ICCV)**, 2013.
21. Bo Wang,Zhuowen Tu.Sparse Subspace Manifold Denoising.**IEEE Conference on Computer Vision and Pattern Recognition (CVPR)**,2013.
22. Xun Shi,Bo Wang, John Tsotsos.Early Recurrence Improves Edge Detection.**British Machine Vision Conference (BMVC)**, 2013.
23. Bo Wang, Zhuowen Tu. Affinity Learning via Self-diffusion for Image Segmentation and Clustering. **IEEE Conference on Computer Vision and Pattern Recognition (CVPR)**, 2012
24. Bo Wang, Zhuowen Tu. Unsupervised metric fusion by cross diffusion. **IEEE Conference on Computer Vision and Pattern Recognition (CVPR)**, 2012
25. Jiayan Jiang,Bo Wang, Zhuowen Tu. Self-Smoothing Operator for Image Retrieval,Clustering and Classification.**International Conference on Computer Vision (ICCV)**,2011.
26. Bo Wang, Xiang Bai, Xinggang Wang, Wenyu Liu, Zhuowen Tu. Object Recognition using Junctions. **European Conference on Computer Vision (ECCV)**, 2010.
27. Xiang Bai, Bo Wang, Xinggang Wang, Wenyu Liu, Zhuowen Tu. Co-Transduction for Shape Retrieval. **European Conference on Computer Vision (ECCV)**, 2010.
28. Bo Wang, Wei Shen, Wenyu Liu, Xinge You, Xiang Bai. Shape Classificationusing Tree-Unions, **International Conference on Pattern Recognition (ICPR)**, 2010

Honours and Awards

Research Fellowship, Stanford University	2013-2017
Research Fellowship, University of Toronto	2010-2012
Excellent Bachelor Thesis, Huazhong University of Science and Technology	2010
Microsoft Young Fellowship, Huazhong University of Science and Technology	2009
National Scholarship, Huazhong University of Science and Technology	2008
Hong Kong Honesty scholarship, Huazhong University of Science and Technology	2008

Invited talks

Visualization and analysis of single-cell RNA-seq data by kernel-based similarity learning, **5th RECOMB Satellite Workshop on Computational Methods in Genetics**, 2017.
Local Diffusion and Cluster Score for Disease Subtyping, **Machine Learning in Computational Biology (MLCB) workshop at NIPS**, 2013
Combining Multiple Domains for Glioblastoma Subtypes. **International Conference on Systems Biology (ICSB)**, 2012

Academic Service	Reviewer for the following journals/institutes/conferences: Nature Biotechnology / Pattern Recognition / T. Cybernetics / TIP / Neurocomputing /Information Fusion/ NIPS / ICML / CVPR / RECOMB/ ISMB. Program Committee Member for AAAI 2019. Program Committee Member for Demo Track of ECML-PPKD, 2017. Program Committee Member for NIPS Workshop on Machine Learning in Computational Biology (MLCB), 2013.
Patents	System and Method for Clustering Data . Patent number: 2922296 Canada.
Skills	Familar with: C, C++, Python, Caffe, TensorFlow, PyTorch etc. Excellent R&D leadership. Excellent teamwork. Strong quick-learning ability. Strong problem-solving ability.