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Research interests

Theoretical aspects of deep learning, quantized neural networks, and multiclass support vector machines. Applications to genomic data analysis.

Education

Sep'16–present **University of Michigan, Ann Arbor** 3.9 GPA
Ph.D. candidate in electrical engineering & computer science (EECS)

Sep'14–Jun'16 **University of California, Davis** 3.9 GPA
M.A. in mathematics

Sep'10–Apr'14 **University of Michigan, Ann Arbor** 3.7 GPA
B.S.E. in EECS with minor in mathematics

Publications

Yutong Wang and Clay Scott. **"VC dimension of partially quantized neural networks in the overparametrized regime."** *Under review.* [arXiv]

Yutong Wang and Clay Scott. **"An exact solver for the Weston-Watkins SVM subproblem."** *ICML 2021.* [Link] [arXiv]

Yutong Wang and Clay Scott. **"Weston-Watkins Hinge Loss and Ordered Partitions."** *NeurIPS 2020.* [Link][arXiv]

Tasha Thong, Yutong Wang, Michael D. Brooks, Christopher T. Lee, Clayton Scott, Laura Balzano, Max S. Wicha, Justin A. Colacino. **"Hybrid Stem Cell States: Insights Into the Relationship Between Mammary Development and Breast Cancer Using Single-Cell Transcriptomics"** *Frontiers in Cell and Developmental Biology, vol. 8, article 288, 2020.* [Link]

Technical reports & workshop presentations

Y. Wang, J. Welch, L. Balzano, and C. Scott. **"Domain adaptation for spatial and dissociated gene expression data."** *Learning Meaningful Representations of Life (LMRL) Workshop at NeurIPS 2019.* [Workshop abstract]

Y. Wang, T. Thong, V. Saligrama, J. Colacino, L. Balzano, and C. Scott. **"A Gene Filter for Comparative Analysis of Single-Cell RNA-Sequencing Trajectory Datasets."** [bioRxiv]

Y. Wang, M. Reyes, and D. Neuhoff. "**Correct Convergence of Min-Sum Loopy Belief Propagation in a Block Interpolation Problem.**" [arXiv]

Teaching experiences

Graduate student instructor at the University of Michigan, Ann Arbor.

•EECS 598: Statistical Learning Theory, Winter 2021. ECE GSI Honorable Mention.

Guest lecturer at the University of Michigan, Ann Arbor.

•SW 508: Essentials of Social Welfare Policy, Fall 2021. Course instructor: Rita Xiaochen Hu.

Guest lecture Topic: Fairness in machine learning and its impact on social policy.

Teaching assistant at the University of California, Davis.

• MAT 21C: Calculus: Partial Derivatives and Series, Winter 2015, Fall 2015, Winter 2016, and Winter 2016.

• MAT 21D: Vector Analysis, Fall 2014, and Spring 2016.

Poster presentations

Jan'19 **Unsupervised feature selection for manifold alignment of scRNA-seq data**
Michigan Student Symposium for Interdisciplinary Statistical Sciences 2019.
"Best Speed Oral Presentation" award.

Jun'17 **Joint analysis of bulk and single-cell RNA-Seq data via matrix factorization**
Midwest Machine Learning Symposium

Oct'17 **A convex clustering formulation using the similarity matrix**
3rd Annual MIDAS Symposium
"Most Interesting Methodological Advancement" award.

Service activities

Reviewer for PNAS, ICML 2020, IEEE Transactions on Signal Processing, JMLR.