

# Yutong Wang

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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	<b>University of Michigan, Ann Arbor</b> <i>Ph.D. candidate in electrical engineering &amp; computer science (EECS)</i>	3.9 GPA
Sep'14–Jun'16	<b>University of California, Davis</b> <i>M.A. in mathematics</i>	3.9 GPA
Sep'10–Apr'14	<b>University of Michigan, Ann Arbor</b> <i>B.S.E. in electrical engineering with minor in mathematics</i>	3.7 GPA

## 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

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| Jan'19 | <b>Unsupervised feature selection for manifold alignment of scRNA-seq data</b><br><i>Michigan Student Symposium for Interdisciplinary Statistical Sciences 2019.</i><br>"Best Speed Oral Presentation" award. |
| Jun'17 | <b>Joint analysis of bulk and single-cell RNA-Seq data via matrix factorization</b><br><i>Midwest Machine Learning Symposium</i>  |
| Oct'17 | <b>A convex clustering formulation using the similarity matrix</b><br><i>3rd Annual MIDAS Symposium</i><br>"Most Interesting Methodological Advancement" award.   |

## Service activities

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