Yijun Dong

Curriculum Vitae

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Research Interests

Randomized numerical linear algebra, statistical learning theory.

Education

2018-2023 **Oden Institute, University of Texas at Austin**,
Computational Science, Engineering, and Mathematics, Ph.D..
- Advisors: Per-Gunnar Martinsson, Rachel Ward
- Thesis: Randomized Dimension Reduction with Statistical Guarantees

2014-2018 **Emory University**,
Applied Mathematics & Engineering Science, B.S., Magna Cum Laude.
- Advisors: Effrosyni Seitaridou, Eric Weeks
- Thesis: Crystals and Liquids in Gravitationally Confined Quasi-2D Colloidal Systems

Teaching Experience

2020-2022 **Teaching Assistant**,
Department of Mathematics & Oden Institute, UT Austin, (Austin, TX).
- Numerical Analysis: Linear Algebra (Fall 2021, graduate)
- Differential Equations with Linear Algebra (Fall 2020, Fall 2022, undergraduate)

2015-2016 **Student Tutor**,
Department of Physics, Oxford College of Emory University, (Oxford, GA).
- Introduction to Physics, Modern Physics

Industry Experience

Jun-Aug 2022 **Research Intern**,
Dell Technologies, (Austin, TX).
- Semi-supervised tabular learning with data augmentation and consistency regularization

May-Aug 2021 **Research Intern**,
Dell Technologies, (Austin, TX).
- Streaming telemetry time series compression on edge devices

Selected Fellowships & Awards

2023	Graduate School Summer Fellowship	UT Austin
2023	Rising Stars in Computational and Data Sciences	UT Austin
2019-2020	NIMS Graduate Fellowship	UT Austin
2018-2019	Peter O'Donnell Graduate Fellowship	UT Austin

2018	Trevor Evans Award	Emory University
	Awarded to top graduate of Emory Department of Mathematics	

Skills

Programming	○ Proficient: Bash, Git, MATLAB, Python
	○ Prior knowledge: C++, IDL, Java, Julia, Mathematica, etc.
Language	○ Chinese (native), English (proficient), Japanese

Publications & Preprints (∗ for equal contribution)

1. **Yijun Dong**, Per-Gunnar Martinsson, Yuji Nakatsukasa. "Efficient Bounds and Estimates for Canonical Angles in Randomized Subspace Approximations". *arXiv preprint arXiv:2211.04676.* (2022).

2. **Yijun Dong***, Yuege Xie*, Rachel Ward. "AdaWAC: Adaptively Weighted Augmentation Consistency Regularization for Volumetric Medical Image Segmentation". *arXiv preprint arXiv:2210.01891.* (2022).

3. Shuo Yang*, **Yijun Dong***, Rachel Ward, Inderjit S Dhillon, Sujay Sanghavi, Qi Lei. "Sample Efficiency of Data Augmentation Consistency Regularization". *arXiv preprint arXiv:2202.12230.* (2022).

4. **Yijun Dong**, Per-Gunnar Martinsson. "Simpler is better: A comparative study of randomized algorithms for computing the CUR decomposition". *arXiv preprint arXiv:2104.05877.* (2021).

5. Chen Cheng*, **Yijun Dong***, Matthew Dorian*, Farhan Kamili*, Effrosyni Seitaridou. "Quantifying Biofilm Formation of *Sinorhizobium meliloti* Bacterial Strains in Microfluidic Platforms by Measuring the Diffusion Coefficient of Polystyrene Beads". *Open Journal of Biophysics.* 7, no. 3 (2017): 157-173.

Selected Presentations

1. "Efficient Bounds and Estimates for Canonical Angles in Randomized Subspace Approximations". *10th ICIAM Conference, Minisymposium on Randomized Numerical Linear Algebra.* Tokyo, Japan, Aug 2023.

2. "Adaptively Weighted Data Augmentation Consistency Regularization". *UT Austin Rising Stars 2023 in Computational and Data Sciences.* Austin, TX, Apr 2023.

3. "Efficient Bounds and Estimates for Canonical Angles in Randomized Subspace Approximations". *Texas Women in Math Symposium (TWIMS2023).* Austin, TX, Mar 2023.

4. "AdaWAC: Adaptively Weighted Augmentation Consistency Regularization for Volumetric Medical Image Segmentation". *IPAM Workshop IV: Multi-Modal Imaging with Deep Learning and Modeling (CMSWS4).* Los Angeles, CA, Nov 2022. (poster)

5. "Sample Efficiency of Data Augmentation Consistency Regularization". *CSEM Student Forum.* Austin, TX, Oct 2022.

6. "Sample Efficiency of Data Augmentation Consistency Regularization". *SIAM Conference on Mathematics of Data Science (MDS22).* San Diego, CA, Sep 2022. (poster)

7. "Simpler is Better: A Comparative Study of Randomized Matrix Skeletonization". *2022 Oden Institute Workshop on Randomized Numerical Linear Algebra.* Austin, TX, Apr 2022.

8. "Revitalize Classical Algorithms with Randomization: Efficient Low-rank Approximations with Statistical Guarantees". *Jane Street Symposium 2022*. New York, NY, Jan 2022.
9. "A Randomized CUR Decomposition via Partially Pivoted LU Factorization". *SIAM Conference on Applied Linear Algebra (LA21)*. Virtual, May 2021. (poster)
10. "Forming 2D colloidal crystals with sedimented colloids". *American Physical Society March Meeting*. Los Angeles, CA, March 2018.

Service

Journal reviewer for *SIAM Journal on Matrix Analysis and Applications*, *IMA Journal of Numerical Analysis*, *BIT Numerical Mathematics*, *Calcolo*

Conference reviewer for *AISTATS 2023*

References

Per-Gunnar Martinsson,
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Rachel Ward,
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The University of Texas at Austin,
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Yuji Nakatsukasa,
Mathematical Institute,
University of Oxford,
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