Taisuke Yasuda

Curriculum Vitae

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Education

Carnegie Mellon University Pittsburgh, PA
- Ph.D. in Computer Science, Aug 2020 – Present
- Advisor: David Woodruff

Carnegie Mellon University Pittsburgh, PA
- M.S. in Computer Science, Aug 2020 – Aug 2021
- Advisor: David Woodruff

Carnegie Mellon University Pittsburgh, PA
- M.S. in Mathematical Sciences, Aug 2017 – May 2019
- Advisor: Ian Tice
- Thesis: *Asymptotic Stability of the Faraday Wave Problem*

Carnegie Mellon University Pittsburgh, PA
- B.S. in Mathematical Sciences, Aug 2015 – May 2019
- Additional Major in Computer Science

Experience

Akuna Capital Chicago, IL
- Junior Quantitative Trader, Aug 2019 – Sep 2020
- High frequency D1 machine learning trading strategies

Research Publications

[1] David P. Woodruff and Taisuke Yasuda. Low Rank Approximation with Sparse Factors. In Proceedings of the 33rd Annual ACM-SIAM Symposium on Discrete Algorithms (SODA).

[2] Yi Li, David P. Woodruff, and Taisuke Yasuda. Exponentially Improved Dimensionality Reduction for ℓ_1: Subspace Embeddings and Independence Testing. In Proceedings of the 34th Annual Conference on Computational Learning Theory (COLT). arXiv:2104.12946 [cs.DS]

[3] Manuel Fernández V, David P. Woodruff, and Taisuke Yasuda. Graph Spanners in the Message-Passing Model. In Proceedings of the 11th Conference on Innovations in Theoretical Computer Science (ITCS), January 2020. arXiv:1911.05991 [cs.DS]

[4] David Altizio, Ian Tice, Xinyu Wu, and Taisuke Yasuda. The Nonlinear Stability Regime of the Viscous Faraday Wave Problem. In *Quart. Appl. Math.*, December 2019. arXiv:1905.04747 [math.AP]

[5] Manuel Fernández V, David P. Woodruff, and Taisuke Yasuda. The Query Complexity of Mastermind with ℓ_p Distances. In Proceedings of the 22nd International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (APPROX), September 2019. arXiv:1909.10668 [cs.DS]

[6] Manuel Fernández V, David P. Woodruff, and Taisuke Yasuda. Tight Kernel Query Complexity of Kernel Ridge Regression and Kernel k-means Clustering. In Proceedings of the 36th International Conference on Machine Learning (ICML), June 2019. arXiv:1905.06394 [cs.DS]

Teaching

Fall 2021	Algorithms for Big Data (15-859)	TA
Spring 2021	Probability and Computing (15-259)	TA
Spring 2019	Algorithms (15-451)	TA
Spring 2019	Concepts of Mathematics (21-127)	TA
Fall 2018	Linear Algebra (21-241)	TA
Spring 2018	Principles of Real Analysis II (21-356)	grader
Fall 2016	Putnam Seminar (21-295)	grader

Honors and Awards

Mar 2018	Top 207	Putnam Mathematical Competition
Mar 2017	Top 500	Putnam Mathematical Competition
Feb 2017		Undergraduate Research Fellowship in Computational Neuroscience
Feb 2016	Top 3	TartanHacks 2016
Feb 2016	Winner	All University Orchestra Concerto Competition
May 2015		Carnegie Scholarship
Mar 2015	2nd place	Pathfinder Scholarship in Mathematics

Professional Service

- Conference subreviewer for PODS 2022, SODA 2020, ITCS 2020, ESA 2020

Talks and Presentations

- Exponentially improved dimension reduction for ℓ_1: subspace embeddings and independence testing
  - Google Scalable Algorithms for Semi-supervised and Unsupervised Learning Workshop (Poster), October 2021
  - WALDO (Poster), August 2021
  - COLT, August 2021
  - CMU Student Seminar Series, July 2021
- Graph spanners in the message-passing model
  - ITCS, January 2020
- Tight kernel query complexity of kernel ridge regression and kernel k-means clustering
  - ICML, June 2019
  - CMU Meeting of the Minds (Poster), May 2019
- How it's made: lower bounds for randomized algorithms
  - CMU Summer Math Seminar, July 2018