Sepehr Assadi

Address: CoRE 310
Department of Computer Science
Rutgers University, Piscataway, NJ.

Email: sepehr@assadi.info

Webpage: sepehr.assadi.info

PROFESSIONAL EXPERIENCE

◇ **Assistant Professor**,   September 2019 to present
Rutgers University, Department of Computer Science

◇ **Postdoctoral Researcher**,   January 2019 to August 2019
Princeton University, Department of Computer Science

- Supported by the Simons Collaboration on Algorithms and Geometry.

◇ **Summer intern at Google Research**, New York City   June 2017 to August 2017

EDUCATION

◇ **PhD in Computer and Information Science**,   August 2013 to December 2018
University of Pennsylvania, Department of Computer and Information Science

- *Advisor*: Sanjeev Khanna
- *Thesis*: Combinatorial Optimization on Massive Datasets: Streaming, Distributed, and Massively Parallel Computation
    * *EATCS Distinguished Dissertation Award*
    * *ACM-EATCS Principles of Distributed Computing Doctoral Dissertation Award*
    * *Rubinoff Dissertation Award from University of Pennsylvania*

◇ **B.Sc. in Computer Engineering**,   September 2008 to July 2013
Sharif University of Technology, Department of Computer Engineering

- *Thesis*: The Rectangle Escape Problem
- *Thesis supervisor*: Hamid Zarrabi-Zadeh

RESEARCH INTERESTS

My primary research interest is in **theoretical foundations of big data analysis**. This in particular includes **sublinear algorithms and lower bounds** in various models of computation for processing massive datasets such as streaming, distributed communication, massively parallel computation, and sublinear time algorithms. More broadly, I am also interested in algorithmic graph theory, communication complexity, online algorithms, and algorithmic game theory.

HONORS AND AWARDS

◇ **Alfred P. Sloan Research Fellowship**, 2023.

◇ **Individual Fulcrum Award** from Rutgers Research Council, 2022.

◇ **Google Research Scholar Program Award**, 2021.

◇ National Science Foundation **Faculty Early Career Development (CAREER) Award**, 2020.

◇ **Best Paper Award** at International Symposium on Distributed Computing, DISC 2020.

◇ ACM-EATCS Principles of Distributed Computing **Doctoral Dissertation Award**, 2019.

◇ EATCS **Distinguished Dissertation Award**, 2019.

◇ Rubinoff **Dissertation Award**, University of Pennsylvania, 2019.

◇ **Best Paper Award** at Symposium on Discrete Algorithms, SODA 2019.

◇ **Best Paper Award** at Symposium on Parallelism in Algorithms and Architectures, SPAA 2017.

◇ **Best Student Paper Award** at Symposium on Principles of Database Systems, PODS 2017.

◇ **Best Paper Award** at Conference on Web and Internet Economics, WINE 2015.

- ◇ **Ranked 8th** in the Asia Regional ACM-ICPC Contest, Tehran, Iran, 2012.
- ◇ **Gold Medal** in the Scientific Olympiad for University Students in Computer Science, Iran, 2012.
- ◇ **Ranked 10th** in National Entrance Exam for M.Sc in Computer Science, Iran, 2010.

According to Google Scholar, as of February 2023, my papers have been cited over 1400 times and my h-index is 23.

Teaching ◇ **Graph Streaming Algorithms and Lower Bounds** (seminar – graduate level)
- CS 671 – Rutgers University (Fall 2020)

◇ **Design and Analysis Of Data Structures And Algorithms II** (graduate level)
- CS 514 – Rutgers University (Spring 2020, Fall 2021)

◇ **Linear Programming** (graduate level)
- CS 521 – Rutgers University (Fall 2022)

◇ **Design and Analysis of Computer Algorithms** (undergraduate level)
- CS 344 – Rutgers University (Fall 2019, Spring 2021, Spring 2022, Spring 2023)

Professional ◇ **Program Committees**:
Activities
- IEEE Symposium on Foundations of Computer Science (FOCS 2023)
- International Colloquium on Automata, Languages, and Programming (ICALP 2023)
- ACM SIAM Symposium on Discrete Algorithms (SODA 2023)
- International Conference on Database Theory (ICDT 2023)
- International Conference on Randomization and Computation (RANDOM 2022)
- European Symposia on Algorithms (ESA 2022)
- ACM Symposium on Theory of Computing (STOC 2022)
- ACM SIAM Symposium on Discrete Algorithms (SODA 2022)
- SIAM Symposium on Simplicity in Algorithms (SOSA 2022)
- ACM Symposium on Principles of Distributed Computing (PODC 2021)
- ACM Symposium on Principles of Database Systems (PODS 2021)
- International Colloquium on Automata, Languages, and Programming (ICALP 2020)
- ACM SIAM Symposium on Discrete Algorithms (SODA 2020)

◇ **Junior Program Committees**:
- ACM Conference on Economics and Computation (EC 2021, EC 2022)
- Conference on Learning Theory (COLT 2023, COLT 2021, COLT 2020)

◇ **Guest Editorships**:
- Co-editor for SIAM Journal on Computing (SICOMP) special issue for STOC, 2022
- Co-editor for ACM Transactions on Algorithms (TALG) special issue for SODA, 2020

◇ **External Reviewer**:
- Journals:
  - Journal of the ACM (JACM)
  - SIAM Journal on Computing (SICOMP)
  - ACM Transactions on Computation Theory (TOCT)
  - ACM Transactions on Algorithms (TALG)
  - Journal of Machine Learning Research (JMLR)
  - IEEE Transactions on Parallel and Distributed Systems (TPDS)

- Theoretical Computer Science (TCS)
- Conferences:
  - Symposium on Theory of Computing (STOC): 2015, 2018, 2019, 2020, 2021, 2022, 2023
  - Symposium on Foundations of Computer Science (FOCS): 2018, 2019, 2020, 2021, 2022
  - Symposium on Discrete Algorithms (SODA): 2017, 2018, 2019, 2021, 2023
  - Computational Complexity Conference (CCC): 2020, 2021
  - International Colloquium on Automata, Languages, and Programming (ICALP): 2016, 2017, 2018, 2019, 2021
  - European Symposium on Algorithms (ESA): 2016, 2019, 2020, 2021
  - Innovations in Theoretical Computer Science (ITCS): 2016, 2019, 2020, 2021, 2022, 2023
  - Symposium on Principles of Distributed Computing (PODC): 2019, 2022, 2023
  - International Symposium on Distributed Computing (DISC): 2020, 2021
  - International Symposium on Theoretical Aspects of Computer Science (STACS): 2018, 2020, 2021
  - Approximation, Randomization, and Combinatorial Optimization (APPROX-RANDOM): 2017, 2018, 2019, 2021

⋄ National Science Foundation Panel Service for AF – Algorithmic Foundations (2020, 2021)

⋄ External Reviewer for the Icelandic Research Fund (2021)

⋄ Guest Reviewer for SIGACT News, 2017 (review of SPAA 2017)

⋄ Organizer of Rutgers/DIMACS theory seminar: 2019 – present

⋄ **Department Committees, Rutgers**:
- Faculty hiring committee: 2020-2021
- Graduate committee: 2019 – present
- PhD student admissions committee: 2019, 2020
- M.Sc student admissions committee: 2021, 2022, 2023

MENTORING   ⋄ **Postdocs at Rutgers/DIMACS**:
- Ariel Schvartzman (DIMACS postdoc, 2020 to 2022; now at Google Research)
- Nicole Wein (DIMACS postdoc, 2021 – present)
- Zihan Tan (DIMACS postdoc, 2022 – present)
- Prantar Ghosh (DIMACS postdocs, 2022 – present)

⋄ **PhD Students at Rutgers**:
- Chen Wang (2019 – present)
- Vihan Shah (2020 – present)
- Janani Sundaresan (2021 – present)
- Parth Mittal (2021 – present)

⋄ **Master Students at Rutgers**:
- Chaitanya Nalam (2020, now a PhD student at University of Michigan)

⋄ **Undergraduate Students at Rutgers**:
- Hoai-an Nguyen (2021 – present)
- Sanjana Pendharkar (2020 – 2021)
- Polina Kochetova (2020, now a PhD student at Simon Fraser University)

- Vihan Shah (2020, now a PhD student at Rutgers)
- Manel Bermad (2020)
- Jakob Degen (2020)
- Arwa El-Hawwat (2019, now a MSc student at Rutgers)

◇ **DIMACS REU Students**:
- Liubov (Luba) Samborska (2022, Yale)
- Glenn Sun (2021, UCLA)
- Andrew Chen (2020, CMU, now a PhD student at Cornell)
- Parth Mittal (2020, Charles University Prague, now a PhD student at Rutgers)
- Pankaj Kumar (2020, Charles University Prague, now a PhD student at Charles University)

◇ **Visiting Undergraduate Students**:
- Nirmit Joshi (2020, VJTI Mumbai, now a PhD student at Northwestern)
- Milind Prabhu (2020, IIT Guwhati, now a PhD student at University of Michigan)

◇ **PhD Students Worked Closely with outside of Rutgers**:
- Soheil Behnezhad (University of Maryland, now an Assistant Professor at Northeastern)
- Raghuvansh Saxena (Princeton, now a postdoc at Microsoft Research New England)
- Sixue (Cliff) Liu (Princeton, now a postdoc at CMU)
- Yu Chen (University of Pennsylvania)

GRANTS
◇ Alfred P. Sloan Research Fellowship: $75,000
◇ Google Research Scholar Program Award: $60,000
◇ National Science Foundation (NSF) CAREER award CCF-2047061: $558,159

OUTREACH
◇ Annual lectures on "Algorithmic Thinking" given to high-school students at PACT, a summer program in Algorithmic and Combinatorial Thinking for high-school students, run by Prof. Rajiv Gandhi at Princeton (2018 – present)
◇ Mentoring undergraduate research as part of DIMACS REU program (4 students) and undergraduate independent studies and summer interns (8 students)
◇ Recipient of "Open and Affordable Textbook Program" award from Rutgers for developing affordable course materials for Algorithm Design course

JOURNAL PAPERS
◇ *Improved Truthful Mechanisms for Combinatorial Auctions with Submodular Bidders*
S. Assadi, S. Singla
SIAM journal on Computing (SICOMP), 2022
Invited paper in the **special issue** for FOCS 2019 papers

◇ *Separating the Communication Complexity of Truthful and Non-Truthful Combinatorial Auctions*
S. Assadi, H. Khandeparkar, R. Saxena, M. Weinberg
SIAM journal on Computing (SICOMP), 2022
Invited paper in the **special issue** for STOC 2020 papers

◇ *Tight Bounds for Single-Pass Streaming Complexity of the Set Cover Problem*
S. Assadi, S. Khanna, Y. Li
SIAM journal on Computing (SICOMP), 2021
Invited paper in the **special issue** for STOC 2016 papers

⬦ *Combinatorial Auctions Do Need Modest Interaction*
S. Assadi
ACM Transactions on Economics and Computation (TEAC), 2020
Invited paper in the **special issue** for EC 2017 papers

⬦ *The Stochastic Matching Problem with (Very) Few Queries*
S. Assadi, S. Khanna, Y. Li
ACM Transactions on Economics and Computation (TEAC), 2019
Invited paper in the **special issue** for EC 2016 papers

⬦ *Fast Convergence in the Double Oral Auction*
S. Assadi, S. Khanna, Y. Li, R. Vohra
ACM Transactions on Economics and Computation (TEAC), 2018
Invited paper in the **special issue** for WINE 2015 and EC 2016 papers

⬦ *On the Rectangle Escape Problem*
A. Ahmadinejad, S. Assadi, E. Emamjomeh-Zadeh, S. Yazdanbod, H. Zarrabi-Zadeh
Theoretical Computer Science (TCS), 2017

⬦ *A Compile-Time Optimization Method for WCET Reduction in Real-Time Embedded Systems through Block Formation*
M. Mohajjel, M. Taram, S. Assadi, A. Ejlali
ACM Transactions on Architecture and Code Optimization (TACO), 2016

⬦ *The Minimum Vulnerability Problem*
S. Assadi, E. Emamjomeh-Zadeh, A. Norouzi-Fard, S. Yazdanbod, H. Zarrabi-Zadeh
Algorithmica, 2014
Invited paper in the **special issue** for ISAAC 2012 papers

CONFERENCE PAPERS

⬦ *(Noisy) Gap Cycle Counting Strikes Back: Random Order Streaming Lower Bounds for Connected Components and Beyond*
S. Assadi, J. Sundaresan
55th ACM Symposium on Theory of Computing, **STOC 2023**

⬦ *On Regularity Lemma and Barriers in Streaming and Dynamic Matching*
S. Assadi, S. Behnezhad, S. Khanna, H. Li
55th ACM Symposium on Theory of Computing, **STOC 2023**

⬦ *All-Norm Load Balancing in Graph Streams via the Multiplicative Weights Update Method*
S. Assadi, A. Bernstein, Z. Langley
The 14th Innovations in Theoretical Computer Science, **ITCS 2023**

⬦ *Tight Bounds for Monotone Minimal Perfect Hashing*
S. Assadi, M. Farach-Colton, W. Kuzmaul
The 34th Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2023**

⬦ *Tight Bounds for Vertex Connectivity in Dynamic Streams*
S. Assadi, V. Shah
The SIAM Symposium on Simplicity in Algorithms, **SOSA 2023**

⬦ *Generalizing Greenwald-Khanna Streaming Quantile Summaries for Weighted Inputs*
S. Assadi, N. Joshi, M. Prabhu, V. Shah
26th International Conference on Database Theory, **ICDT 2023**

◇ *Single-pass Streaming Lower Bounds for Multi-armed Bandits Exploration with Instance-sensitive Sample Complexity*
S. Assadi, C. Wang
36rd Conference on Neural Information Processing Systems, **NeurIPS 2022**

◇ *Rounds vs Communication Tradeoffs for Maximal Independent Sets*
S. Assadi, G. Kol, Z. Zhang
The 63rd IEEE Symposium on Foundations of Computer Science, **FOCS 2022**
Invited to **SICOMP special issue** for FOCS 2022 papers

◇ *Asymptotically Optimal Bounds for Estimating H-Index in Sublinear Time with Applications to Subgraph Counting*
S. Assadi, H. Nguyen
Approximation, Randomization, and Combinatorial Optimization, **APPROX 2022**

◇ *Hierarchical Clustering in Graph Streams: Single-Pass Algorithms and Space Lower Bounds*
S. Assadi, V. Chatziafratis, J. Lacki, V. Mirrokni, C. Wang
35th Annual Conference on Learning Theory, **COLT 2022**

◇ *Decremental Matching in General Graphs*
S. Assadi, A. Bernstein, A. Dudeja
49th International Colloquium on Automata, Languages and Programming, **ICALP 2022**

◇ *Deterministic Graph Coloring in the Streaming Model*
S. Assadi, A. Chen, G. Sun
54th ACM Symposium on Theory of Computing, **STOC 2022**

◇ *Brooks' Theorem in Graph Streams: A Single-Pass Semi-Streaming Algorithm for Δ-Coloring*
S. Assadi, P. Kumar, P. Mittal
54th ACM Symposium on Theory of Computing, **STOC 2022**

◇ *SPINE: Scaling up Programming-by-Negative-Example for String Filtering and Transformation*
C. Zuo, S. Assadi, D. Deng
ACM International Conference on Management of Data, **SIGMOD 2022**

◇ *An Asymptotically Optimal Algorithm for Maximum Matching in Dynamic Streams*
S. Assadi, V. Shah
The 13th Innovations in Theoretical Computer Science, **ITCS 2022**

◇ *Sublinear Time and Space Algorithms for Correlation Clustering via Sparse-Dense Decompositions*
S. Assadi, C. Wang
The 13th Innovations in Theoretical Computer Science, **ITCS 2022**

◇ *A Two-Pass (Conditional) Lower Bound for Semi-Streaming Maximum Matching*
S. Assadi
The 33rd Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2022**

◇ *Semi-Streaming Bipartite Matching in Fewer Passes and Optimal Space*
S. Assadi, A. Jambulapati, Y. Jin, A. Sidford, K. Tian
The 33rd Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2022**

◇ *Ruling Sets in Random Order and Adversarial Streams*
S. Assadi, A. Dudeja

International Symposium on Distributed Computing, **DISC 2021**

◇ *On the Robust Communication Complexity of Bipartite Matching*
S. Assadi, S. Behnezhad
Approximation, Randomization, and Combinatorial Optimization, **RANDOM 2021**

◇ *Graph Connectivity and Single Element Recovery via Linear and OR Queries*
S. Assadi, D. Chakrabarty, S. Khanna
European Symposium on Algorithms, **ESA 2021**

◇ *Fully Dynamic Set Cover via Hypergraph Maximal Matching: An Optimal Approximation Through a Local Approach*
S. Assadi, S. Solomon
European Symposium on Algorithms, **ESA 2021**

◇ *Beating Two-Thirds for Random-Order Streaming Matching*
S. Assadi, S. Behnezhad
48th International Colloquium on Automata, Languages and Programming, **ICALP 2021**

◇ *Graph Streaming Lower Bounds for Parameter Estimation and Property Testing via a Streaming XOR Lemma*
S. Assadi, V. N
53rd ACM Symposium on Theory of Computing, **STOC 2021**

◇ *Improved Truthful Mechanisms for Subadditive Combinatorial Auctions: Breaking the Logarithmic Barrier*
S. Assadi, T. Kesselheim, S. Singla
The 32nd Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2021**

◇ *A Simple Semi-Streaming Algorithm for Global Minimum Cuts*
S. Assadi, A. Dudeja
The SIAM Symposium on Simplicity in Algorithms, **SOSA 2021**

◇ *An Auction Algorithm for Bipartite Matching in Streaming and Massively Parallel Computation Models*
S. Assadi, C. Liu, R. Tarjan
The SIAM Symposium on Simplicity in Algorithms, **SOSA 2021**

◇ *Near-Quadratic Lower Bounds for Two-Pass Graph Streaming Algorithms*
S. Assadi, R. Raz
The 61st IEEE Symposium on Foundations of Computer Science, **FOCS 2020**

◇ *Multi-Pass Graph Streaming Lower Bounds for Cycle Counting, MAX-CUT, Matching Size, and Other Problems*
S. Assadi, G. Kol, R. Saxena, H. Yu
The 61st IEEE Symposium on Foundations of Computer Science, **FOCS 2020**

◇ *Improved Bounds for Distributed Load Balancing*
S. Assadi, A. Bernstein, Z. Langley
International Symposium on Distributed Computing, **DISC 2020**
Best Paper Award

◇ *Palette Sparsification Beyond* $(\Delta + 1)$ *Vertex Coloring*
N. Alon, S. Assadi
Approximation, Randomization, and Combinatorial Optimization, **RANDOM 2020**

◇ *Lower Bounds for Distributed Sketching of Maximal Matchings and Maximal Independent Sets*
S. Assadi, G. Kol, R. Oshman
ACM Symposium on Principles of Distributed Computing, **PODC 2020**

◇ *Exploration with Limited Memory: Streaming Algorithms for Coin Tossing, Noisy Comparisons, and Multi-Armed Bandits*
S. Assadi, C. Wang
52nd ACM Symposium on Theory of Computing, **STOC 2020**

◇ *Separating the Communication Complexity of Truthful and Non-Truthful Combinatorial Auctions*
S. Assadi, H. Khandeparkar, R. Saxena, M. Weinberg
52nd ACM Symposium on Theory of Computing, **STOC 2020**
Invited to **SICOMP special issue** for STOC 2020 papers

◇ *Improved Truthful Mechanisms for Combinatorial Auctions with Submodular Bidders*
S. Assadi, S. Singla
60th Annual IEEE Symposium on Foundations of Computer Science, **FOCS 2019**
Invited to **SICOMP special issue** for FOCS 2019 papers
Invited to **Highlights Beyond EC** in EC'20
Invited research article in **SIGecom Exchanges**

◇ *Secretary Ranking with Minimal Inversions*
S. Assadi, E. Balkanski, R. Paes Leme
33rd Conference on Neural Information Processing Systems, **NeurIPS 2019**

◇ *Massively Parallel Algorithms for Finding Well-Connected Components*
S. Assadi, X. Sun, O. Weinstein
ACM Symposium on Principles of Distributed Computing, **PODC 2019**

◇ *Distributed Weighted Matching via Randomized Composable Coresets*
S. Assadi, M. Bateni, V. Mirrokni
36th International Conference on Machine Learning, **ICML 2019**

◇ *When Algorithms for Maximal Independent Set and Maximal Matching Run in Sublinear Time*
S. Assadi, S. Solomon.
46th International Colloquium on Automata, Languages and Programming, **ICALP 2019**

◇ *Distributed and Streaming Linear Programming in Low Dimensions*
S. Assadi, N. Karpov, Q. Zhang.
38th Annual ACM Symposium on Principles of Database Systems, **PODS 2019**
Invited to **TODS special issue** for PODS 2019 papers

◇ *Polynomial Pass Lower Bounds for Graph Streaming Algorithms*
S. Assadi, Y. Chen, S. Khanna.
51st ACM Symposium on Theory of Computing, **STOC 2019**

◇ *A Simple Sublinear-Time Algorithm for Counting Arbitrary Subgraphs via Edge Sampling*
S. Assadi, M. Kapralov, S. Khanna.
10th Innovations in Theoretical Computer Science, **ITCS 2019**

⬦ *Sublinear Algorithms for* $(\Delta + 1)$ *Vertex Coloring*
S. Assadi, Y. Chen, S. Khanna.
30th Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2019**
Best Paper Award
Invited to Highlights of Algorithms, **HALG 2020**

⬦ *Coresets Meet EDCS: Algorithms for Matching and Vertex Cover on Massive Graphs*
S. Assadi, M. Bateni, A. Bernstein, V. Mirrokni, C. Stein
30th Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2019**

⬦ *Fully Dynamic Maximal Independent Set with Sublinear in n Update Time*
S. Assadi, K. Onak, B. Schieber, S. Solomon.
30th Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2019**

⬦ *Stochastic Submodular Cover with Limited Adaptivity*
A. Agarwal, S.Assadi, S. Khanna.
30th Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2019**

⬦ *Towards a Unified Theory of Sparsification for Matching Problems*
S. Assadi, A. Bernstein.
2nd Symposium on Simplicity in Algorithms, **SOSA 2019**

⬦ *Fully Dynamic Maximal Independent Set with Sublinear Update Time*
S. Assadi, K. Onak, B. Schieber, S. Solomon.
50th Annual ACM Symposium on the Theory of Computing, **STOC 2018**

⬦ *Tight Bounds on the Round Complexity of the Distributed Maximum Coverage Problem*
S. Assadi, S. Khanna.
29th Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2018**

⬦ *Randomized Composable Coreset for Matching and Vertex Cover*
S. Assadi, S. Khanna
29th Annual ACM Symposium on Parallelism in Algorithms and Architectures, **SPAA 2017**
Best Paper Award (co-winner)
Invited to Highlights of Algorithms, **HALG 2018**

⬦ *Learning with Limited Rounds of Adaptivity: Coin Tossing, Multi-Armed Bandits, and Ranking from Pairwise Comparisons*
A. Agarwal, S. Agarwal, S. Assadi, S. Khanna
30th Annual Conference on Learning Theory, **COLT 2017**

⬦ *Combinatorial Auctions Do Need Modest Interaction*
S. Assadi
18th ACM Conference on Economics and Computation, **EC 2017**
Invited to **TEAC special issue** for EC 2017 papers

⬦ *The Stochastic Matching Problem: Beating Half with a Non-Adaptive Algorithm*
S. Assadi, S. Khanna, Y. Li
18th ACM Conference on Economics and Computation, **EC 2017**

◇ *Tight Space-Approximation Tradeoff for the Multi-Pass Streaming Set Cover Problem*
S. Assadi
36th Annual ACM Symposium on Principles of Database Systems, **PODS 2017**
Best Student Paper Award

◇ *On Estimating Maximum Matching Size in Graph Streams*
S. Assadi, S. Khanna, Y. Li
28th Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2017**
Invited to Highlights of Algorithms, **HALG 2017**

◇ *Tight Bounds for Single-Pass Streaming Complexity of the Set Cover Problem*
S. Assadi, S. Khanna, Y. Li
48th Annual Symposium on the Theory of Computing, **STOC 2016**
Invited to **SICOMP special issue** for STOC 2016 papers

◇ *The Stochastic Matching Problem With (Very) Few Queries*
S. Assadi, S. Khanna, Y. Li
17th ACM Conference on Economics and Computation, **EC 2016**
Invited to **TEAC special issue** for EC 2016 papers

◇ *Algorithms for Provisioning Queries and Analytics*
S. Assadi, S. Khanna, Y. Li, V. Tannen
19th International Conference on Database Theory, **ICDT 2016**

◇ *Maximum Matchings in Dynamic Graph Streams and the Simultaneous Communication Model*
S. Assadi, S. Khanna, Y. Li, G. Yaroslavtsev
27th Annual ACM-SIAM Symposium on Discrete Algorithms, **SODA 2016**

◇ *Dynamic Sketching for Graph Optimization Problems with Applications to Cut-Preserving Sketches*
S. Assadi, S. Khanna, Y. Li, V. Tannen
35th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science, **FSTTCS 2015**

◇ *Fast Convergence in the Double Oral Auction*
S. Assadi, S. Khanna, Y. Li, R. Vohra
11th Conference on Web and Internet Economics, **WINE 2015**
Best Paper Award
Invited to **TEAC special issue** for WINE 2015 and EC 2016 papers

◇ *Online Assignment of Heterogeneous Tasks in Crowdsourcing Markets*
S. Assadi, J. Hsu, S. Jabbari
3rd AAAI Conference on Human Computation & Crowdsourcing, **HCOMP 2015**

◇ *On The Rectangle Escape Problem*
S. Assadi, E. Emamjomeh-Zadeh, S. Yazdanbod, H. Zarrabi-Zadeh
25th Canadian Conference on Computational Geometry, **CCCG 2013**

◇ *The Minimum Vulnerability Problem*
S. Assadi, E. Emamjomeh-Zadeh, A. Norouzi-Fard, S. Yazdanbod, H. Zarrabi-Zadeh
23rd International Symposium on Algorithms and Computation, **ISAAC 2012**
Invited to **Algorithmica special issue** for ISAAC 2012 papers

◇ **Keynotes:**

- 36th International Symposium on Distributed Computing (DISC 2022), Keynote speaker, October 2022

◇ **Workshops and Other Events:**

- Workshop on Advances in Distributed Graph Algorithms (ADGA), *"Lower Bounds for Distributed Sketching"*, October 2022
- Simons-DIMACS Workshop on Lower Bounds and Frontiers in Data Structures, *"Tight Bounds for Monotone Minimal Perfect Hashing"*, August 2022
- FODSI Workshop on Sublinear Algorithms, *"A (Slightly) Sublinear Space Streaming Algorithm for Matchings"*, August 2022
- Banff Workshop on Communication Complexity and Applications III, *"Recent Advances in Multi-Pass Graph Streaming Lower Bounds"*, July 2022
- Workshop on Algorithms and Foundations for Data Science, *"Brooks' Theorem in Graph Streams"*, June 2022
- Workshop on Algorithms for Large Data (Online), WALDO 2021, *"Multi-Pass Graph Streaming Lower Bounds for Parameter Estimation and Property Testing Problems"*, August 2021
- INFORMS Session on Bandits Meet Optimization, *"Exploration with Limited Memory: Streaming Algorithms for Multi-Armed Bandits"*, November 2020
- Highlights of Algorithm Conference, *"Sublinear Algorithms for $(\Delta + 1)$ Vertex Coloring"*, August 2020
- New York Area Theory Day, *"Sublinear Algorithms for $(\Delta + 1)$ Vertex Coloring"*, May 2019
- Simons Institute meeting on Algorithms and Geometry Collaboration , *"Sublinear Algorithms for $(\Delta + 1)$ Vertex Coloring"*, Feburary 2019
- Simons Institute workshop on Sublinear Algorithms and Nearest-Neighbor Search, *"Sublinear Algorithms for $(\Delta + 1)$ Vertex Coloring"*, November 2018
- Linear Sketching as a Tool for Everything workshop at FOCS'17, *"Lower Bounds for Linear Sketches of Approximate Matchings and Matrix Rank"*, October 2017

◇ **Seminars and Colloquia:**

- MIT Algorithms and Complexity Seminar, *"Deterministic Graph Coloring in the Streaming Model"*, March 2022
- Rutgers Discrete Math Seminar, *"Palette Sparsification for Vertex Coloring"*, October 2021
- University of Washington Theory Seminar, *"Multi-Pass Graph Streaming Lower Bounds for Parameter Estimation and Property Testing Problems"*, April 2020
- Rutgers/DIMACS Theory Seminar, *"Improved Truthful Mechanisms for Combinatorial Auctions with Submodular Bidders"*, September 2019
- MIT Theory of Computation Colloquium, *"Sublinear Algorithms for $(\Delta+1)$ Vertex Coloring"*, May 2019
- Cornell CS Theory Seminar, *"Sublinear Algorithms for $(\Delta + 1)$ Vertex Coloring"*, May 2019
- Google NYC Research Seminar, *"Sublinear Algorithms for $(\Delta + 1)$ Vertex Coloring"*, April 2019
- Princeton Theory Seminar, *"Polynomial Pass Lower Bounds in Graph Streams"*, April 2019
- Rutgers/DIMACS Theory Seminar, *"Polynomial Pass Lower Bounds in Graph Streams"*, March 2019
- TCS+ Online Seminar, *"A Simple Sublinear-Time Algorithm for Counting Arbitrary Subgraphs via Edge Sampling"*, Feburary 2019
- Indiana Theory Seminar, *"Tight Bounds on the Round Complexity of the Distributed Maximum Coverage Problem"*, November 2017

- Columbia Theory Seminar, *"Tight Bounds on the Round Complexity of the Distributed Maximum Coverage Problem"*, October 2017

- IBM Watson Research Seminar, *"Randomized Composable Coreset for Matching and Vertex Cover"*, September 2017

- Google NYC Research Seminar, *"Learning with Limited Rounds of Adaptivity"*, July 2017

- Upenn Theory Seminar, *"Combinatorial Auctions Do Need Modest Interaction"*, April 2017

- Johns Hopkins Algorithms and Complexity Seminar, *"Matching Size and Matrix Rank Estimation in Data Streams"*, April 2017

- Google NYC Research Seminar, *"Tight Bounds for Single-Pass Streaming Complexity of the Set Cover Problem"*, November 2016

- Columbia Theory Seminar, *"Tight Bounds for Linear Sketches of Approximate Matchings"*, January 2016

- Upenn Theory Seminar, *"Tight Bounds for Linear Sketches of Approximate Matchings"*, January 2016

◇ **Conference Talks:**

- ACM-SIAM Symposium on Discrete Algorithms (SODA'22), "A Two-Pass (Conditional) Lower Bound for Semi-Streaming Maximum Matching", January 2022

- RANDOM: The Conference (RANDOM'20), "Palette Sparsification Beyond $(\Delta + 1)$ Vertex Coloring", August 2020

- ACM Symposium on Principles of Distributed Computing (PODC'20), "Lower Bounds for Distributed Sketching of Maximal Matchings and Maximal Independent Sets", August 2020

- Innovations in Theoretical Computer Science (ITCS'19), "A Simple Sublinear-Time Algorithm for Counting Arbitrary Subgraphs via Edge Sampling", January 2019

- ACM-SIAM Symposium on Discrete Algorithms (SODA'19), "Sublinear Algorithms for $(\Delta + 1)$Vertex Coloring", January 2019

- ACM-SIAM Symposium on Discrete Algorithms (SODA'19), "Coresets Meet EDCS: Algorithms for Matching and Vertex Cover on Massive Graphs", January 2019

- SIAM Symposium on Simplicity in Algorithms (SOSA'19), "Towards a Unified Theory of Sparsification for Matching Problems", January 2019

- ACM Symposium on the Theory of Computing (STOC'18), "Fully Dynamic Maximal Independent Set with Sublinear Update Time", June 2018

- ACM-SIAM Symposium on Discrete Algorithms (SODA'18), "Tight Bounds on the Round Complexity of the Distributed Maximum Coverage Problem", January 2018

- ACM Symposium on Parallelism in Algorithms and Architectures (SPAA'17), "Randomized Composable Coreset for Matching and Vertex Cover", July 2017

- ACM Conference on Economics and Computation (EC'17), "Combinatorial Auctions Do Need Modest Interaction", July 2017

- ACM Conference on Economics and Computation (EC'17), "The Stochastic Matching Problem: Beating Half with a Non-Adaptive Algorithm", July 2017

- ACM Symposium on Principles of Database Systems (PODS'17), "Tight Space-Approximation Tradeoff for the Multi-Pass Streaming Set Cover Problem", May 2017

- ACM Symposium on the Theory of Computing (STOC'16), "Tight Bounds for Single-Pass Streaming Complexity of the Set Cover Problem", June 2016

- ACM-SIAM Symposium on Discrete Algorithms (SODA'16), "Maximum Matchings in Dynamic Graph Streams and the Simultaneous Communication Model", January 2016