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Research Interests

- Learning-Augmented Algorithms
- Machine Learning
- Operations Research
- Approximation and Online Algorithms
- Combinatorial Optimization

Education

2022–05/2026 (Expected) **Ph.D. in Algorithms, Combinatorics, and Optimization**, *Tepper School of Business, Carnegie Mellon University, US*, Advisors: Benjamin Moseley and R. Ravi, GPA: 3.95/4.00

2022–2023 **M.S. in Algorithms, Combinatorics, and Optimization**, *Tepper School of Business, Carnegie Mellon University*, US, GPA: 4.13/4.00

2016–2021 **B.Sc. in Computer Science**, *Sharif University of Technology*, Iran, GPA: 18.19/20.00

Honors and Awards

2024 – 2025 **Tepper School of Business Presidential Fellowship**, *Carnegie Mellon University*

2023 **NeurIPS Spotlight Paper**

2022 – 2026 **William Larimer Mellon Fellowship**, *Carnegie Mellon University*

2021 Ranked **1st** in the National University Entrance Exam in Iran for M.Sc. in Computer Science

2015 **Silver Medal** in Iranian National Olympiad in Informatics

Publications

Note: In theoretical computer science, it is customary to sort the authors of each paper alphabetically.

2025 Samuel McCauley, Benjamin Moseley, Aidin Niaparast, Helia Niaparast, Shikha Singh, "Incremental Approximate Single-Source Shortest Paths with Predictions", *In 52nd International Colloquium on Automata, Languages, and Programming (ICALP 2025)*, Link

2024 Benjamin Moseley, Aidin Niaparast, and R. Ravi, "Putting Off the Catching Up: Online Joint Replenishment Problem with Holding and Backlog Costs", *In Proceedings of the 2025 Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2025)*, Link

2024 Michael Dinitz, Sungjin Im, Thomas Lavastida, Benjamin Moseley, Aidin Niaparast, Sergei Vassilvitskii, "Binary Search with Distributional Predictions", *The Thirty-eighth Annual Conference on Neural Information Processing Systems (NeurIPS 2024)*, Link

2024 Samuel McCauley, Benjamin Moseley, Aidin Niaparast, and Shikha Singh, "Incremental Topological Ordering and Cycle Detection with Predictions", In *Proceedings of the 41st International Conference on Machine Learning (ICML 2024)*, Link

2023 Samuel McCauley, Benjamin Moseley, Aidin Niaparast, and Shikha Singh, "Online List Labeling with Predictions", *In Advances in Neural Information Processing Systems (NeurIPS 2023)*, Link, **Spotlight Paper** (top 3% of the accepted papers)

2023 Da Qi Chen, Lin An, Aidin Niaparast, R. Ravi, and Oleksandr Rudenko, "Timeliness Through Telephones: Approximating Information Freshness in Vector Clock Models", *In Proceedings of the 2023 Annual ACM-SIAM Symposium on Discrete Algorithms (SODA 2023)*, Link

2021 Saieed Akbari, Sebastian M. Cioabă, Samira Goudarzi, Aidin Niaparast, and Artin Tajdini, "On a question of Haemers regarding vectors in the nullspace of Seidel matrices", *Linear Algebra and Its Applications*, Link

Teaching

2023 – Now **Carnegie Mellon University**

- **Instructor.** Optimization for Business (Summer 2024)
- **Teaching Assistant.** Machine Learning Fundamentals (Spring 2024), Optimization for Business (Spring 2023, Fall 2023, Fall 2024), End-to-End Business Analytics (Fall 2023, Fall 2024, Fall 2025)

2019 – 2020 **Sharif University of Technology**

- **Teaching Assistant.** Combinatorial Optimization (Fall 2020), Data Structures (Fall 2020), Information Theory and Coding (Fall 2020), Combinatorics and its Applications (Spring 2020), Discrete Structures (Spring 2020), Analysis of Algorithm (Spring 2019)

2016 – 2020 **Olympiad Teacher**

- Taught Algorithms, Programming (C++), Combinatorics, and Graph Theory to high school students preparing for INOI, the Iranian national competition that qualifies students for the International Olympiad of Informatics (IOI).
- 1000+ hours of teaching experience.

Service

Reviewer

- **Conference.** Symposium on Discrete Algorithms (**SODA 2026**), International Conference on Machine Learning (**ICML 2025**), International Colloquium on Automata, Languages and Programming (**ICALP 2025**), International Conference on Artificial Intelligence and Statistics (**AISTATS 2025**), Conference on Neural Information Processing Systems (**NeurIPS 2024, 2025**), Innovations in Theoretical Computer Science (**ITCS 2024**), Symposium on Principles of Database Systems (**PODS 2024**), International Conference on Theory and Applications of Models of Computation (**TAMC 2024**)
- **Journal.** Algorithmica

Skills

Programming:, Proficient in Python, C++, and Java. Working experience with R.

Tools:, PyTorch, SQL, NumPy, CPLEX, OpenSolver

References

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