

# ANDISHEH (ELAHE) GHASEMI

Northeastern University, Boston, MA  
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## PROFESSIONAL SUMMARY

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Dedicated and detail-oriented doctoral researcher in Computer Science at Northeastern University, specializing in theoretical computer science and algorithm design. Experience in researching and solving complex problems in learning augmented algorithms, online algorithms, and graph algorithms with a strong foundation in mathematics and computational theory. Passionate about using analytical and programming skills to contribute to innovative solutions in academia and industry.

## EDUCATION

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**Northeastern University, Boston, USA** *expected 2028*  
PhD in Computer Science  
Supervisors: Rajmohan Rajaraman, Mahsa Derakhshan

**Université Paris Cité, Paris, France** *2023*  
M.Sc. in Computer Science  
Parisian Master of Research in Computer Science (MPRI)

**Sharif University of Technology, Tehran, Iran** *2022*  
B.Sc. in Computer Science  
Department of Mathematical Sciences

## PROFESSIONAL EXPERIENCES

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**Doctoral Researcher** Jan 2024 - Present  
*Supervisors: Rajmohan Rajaraman, Mahsa Derakhshan* *Boston, MA*

- Conducted research on the communication complexity of the Minimum Vertex Cover problem, advancing theoretical frameworks and contributing to the understanding of distributed computing challenges. Authored and submitted findings to ICALP 2025.
- Initiated research on correlation clustering, focusing on designing efficient algorithms for clustering with minimal disagreements, with applications in data analysis and network science.

**Graduate Researcher** April - September 2023  
*Supervisor: Chien-Chung Huang* *Paris, France*

- Formulated innovative solutions to address constraints in assembly and job scheduling, improving throughput in computational environments.

**Undergrad Researcher** September 2021 - March 2022  
*Supervisor: Vincent Jugé* *Paris, France*

- Derived upper bounds for PowerSort and PeekSort algorithms, optimizing efficiency for sorting tasks in data processing.
- Enhanced theoretical understanding of merging sub-routines, influencing practical implementations like Timsort.
- Published results in the International Colloquium on Automata, Languages, and Programming (ICALP), a leading conference in theoretical computer science, and in Algorithmica, a prominent journal in algorithms research.

## Undergrad Researcher

*Supervisor: Javad Ebrahimi*

March 2021 - April 2022

*Tehran, Iran*

- Investigated the properties of entropic submodular functions, advancing theoretical insights.
- Designed novel approaches to characterize rank functions, contributing to the development of more efficient algorithms for submodular optimization problems. Presented findings in academic seminars.

## Frontend Developing Internship

*Shab Company*

May 2020 -August 2020

*Tehran, Iran*

- Developed and deployed dynamic web components using HTML, CSS, JavaScript, and React, improving user engagement.
- Collaborated in an Agile team environment, ensuring timely delivery of project milestones.

## PUBLICATIONS

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- Mahsa Derakhshan, Andisheh Ghasemi, Rajmohan Rajaraman. One-way Communication Complexity of Minimum Vertex Cover in General Graphs. To be presented at *ICALP 2025*.
- Elahe Ghasemi, Vincent Jugé, and Ghazal Khalighinezhad, Helia Yazdanyar. Galloping in Fast-Growth Natural Merge Sorts. In *Algorithmica 2024*. Originally presented at *ICALP 2022*.
- Mohammad Rashid, Elahe Ghasemi, and Javad B Ebrahimi. Entropic weighted rank function. In *IWCIT 2022*.

## ACHIEVEMENTS

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- Ranked 60th among 148,429 participants in national university entrance examination of Iran (Konkour)
- Granted PGSM (Paris Graduate School of Mathematics) scholarship of Fondation Sciences Mathématiques de Paris

## TEACHING ASSISTANT EXPERIENCES

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<b>Algorithms</b> , <i>Mahsa Derakhshan, Northeastern University</i>	Fall 2024
<b>Algorithms Design</b> , <i>Masood Seddighin, Sharif University of Technology</i>	Spring 2021
<b>Operating Systems</b> , <i>Hadi Foroughmand, Sharif University of Technology</i>	Spring 2021
<b>Theory of Languages &amp; Automata</b> , <i>Javad Ebrahimi, Sharif University of Technology</i>	Fall 2020
<b>Designing Algorithms</b> , <i>Morteza Alimi, Sharif University of Technology</i>	Spring 2020
<b>Data Structures</b> , <i>Morteza Alimi, Sharif University of Technology</i>	Fall 2019

## OTHER EXPERIENCES

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<b>Peer Review - APPROX Conference</b> <i>reviewer</i>	Summer 2023 <i>Paris, France</i>
<b>Peer Review - FOCS Conference</b> <i>reviewer</i>	Spring 2025 <i>Boston, USA</i>
<b>Theory Group Seminar at Northeastern University</b> <i>Co-organizer</i>	Fall 2024 - Spring 2025 <i>Boston, MA</i>