

# ELAHE GHASEMI

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## RESEARCH INTERESTS

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- Designing Algorithms
- Graph Theory
- Algorithmic Game Theory

## EDUCATION

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**Northeastern University, Boston, USA** 2024 - present  
PhD in Computer Science  
Supervisors: Rajmohan Rajaraman, Mahsa Derakhshan

**Université Paris Cité, Paris, France** 2022 - 2023  
M.Sc. in Computer Science  
Parisian Master of Research in Computer Science (MPRI)

**Sharif University of Technology, Tehran, Iran** 2017 - 2022  
B.Sc. in Computer Science Total GPA : 16.72/20  
Department of Mathematical Sciences

**National Organization for Developement of Exceptional Talents, Rasht, Iran** 2013 - 2017  
Mathematics and Physics High School Diploma. Total GPA: 19.86/20

## PUBLICATIONS

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- Elahe Ghasemi, Vincent Jugé, and Ghazal Khalighinezhad. Galloping in fast-growth natural merge sorts. In *49th International Colloquium on Automata, Languages, and Programming (ICALP 2022)*. Schloss Dagstuhl-Leibniz-Zentrum für Informatik, 2022.
- Mohammad Rashid, Elahe Ghasemi, and Javad B Ebrahimi. Entropic weighted rank function. In *10th Iran Workshop on Communication and Information Theory (IWCIT 2022)*. CoRR, abs/2206.05968, 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

## RESEARCH EXPERIENCES

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**Approximation Algorithms** April - September 2023  
*Supervisor: Chien-Chung Huang*

- working on job scheduling problem with bag constraints

**Sorting Algorithms and their Complexity** September 2021 - March 2022  
*Supervisor: Vincent Jugé*

- Providing new upper bounds on the number of comparisons performed by sorting algorithms such as PowerSort and PeekSort and its variants based on the study of the merging sub-routine used in Natural Merge Sorts like Timsort.

### **Entropic Sumbodular Functions**

March 2021 - April 2022

*Supervisor: Javad Ebrahimi*

- Providing a set of random variables for some elements that the entropy of a given set of elements equals to the heaviest base in the weighted matroid made by the elements.

### **Algorithmic Game Theory**

April - September 2021

*Supervisor: Masood Seddighin*

- Reviewing Papers in algorithmic game theory and mechanism design.

## **PEER REVIEW EXPERIENCE**

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### **APPROX Conference**

summer 2023

*reviewer*

## **WORK EXPERIENCE**

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### **Shab Company, Tehran**

summer 2020

*Frontend Developer*

- Internship under this company. Learned and implemented various aspects of web development with html, css, JavaScript and React.

## **LANGUAGES**

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**Persian** Native

**English** Advanced (**TOEFL iBT Score: 110/120: R 27/30 - L 30/30 - S 25/30 - W 28/30**)

**French** Beginner

## **TEACHING ASSISTANT EXPERIENCES**

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**Algorithms Design**, *Masood Seddighin, Sharif University of Technology* Spring 2021

**Operating Systems**, *Hadi Foroughmand, Sharif University of Technology* Spring 2021

**Theory of Languages & Automata**, *Javad Ebrahimi, Sharif University of Technology* Fall 2020

**Designing Algorithms**, *Morteza Alimi, Sharif University of Technology* Spring 2020

**Data Structures**, *Morteza Alimi, Sharif University of Technology* Fall 2019

## **PROGRAMMING LANGUAGES TECHNOLOGIES**

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Java, Python, JavaScript, React, R, Latex