Hamed Saleh

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Research Interests

- Distributed/Parallel Computing
- Massively Parallel Computation
- Sublinear Space
- Streaming Algorithms

Education

University of Maryland, College Park, MD. GPA: 3.97/4 — 2018 - present
Department of Computer Science
Ph.D. in Computer Science, under supervision of Prof. Hajiaghayi
Thesis: Sublinear Algorithms for Processing Massive Datasets

Sharif University of Technology, Tehran, Iran. GPA: 16.57/20 — 2012 - 2017
Department of Computer Engineering
B.Sc. in Computer Engineering

Research Experience

Research Assistant at Algorithms Laboratory — 2018 - present
University of Maryland, College Park
Under supervision of Prof. M. HajiAghayi
Working on distributed/massively parallel algorithms for graph/combinatorial problems.

Visiting Researcher — 2021
Toyota Technological Institute at Chicago, Chicago, IL
Under supervision of Research Assistant Prof. Saeed Seddighin
On sublinear update time algorithms for the Dynamic Subset Sum problem.

Visiting Graduate Student — 2018
Simons Institute for Theory of Computing, Berkeley, CA
Foundations of Data Science program

Undergraduate member of **CE Algorithm Laboratory** — 2016 - 2017
Sharif University of Technology
Under supervision of Prof. M. Ghodsi
Working on the problem of fair allocation of indivisible goods

Honors and Awards

ACM-ICPC, International Collegiate Programming Contest by ACM.

- **15th Team** in the 39th ACM-ICPC World Finals. — 2015
  Marrakech, Morocco
- **27th Team** in the 37th ACM-ICPC World Finals. — 2013
  St. Petersburg, Russia
- **1st, 2nd, 1st Team** in Regional Contests of ACM-ICPC West Asia Region, Tehran Site, respectively in 2012, 2013 and 2014.

Awarded University of Maryland **Dean's fellowship** . — 2018 - 2019
University of Maryland, College Park, MD

Gold Medal in the 20th Iranian National Olympiad in Informatics. 2010

Awarded as **Outstanding Student** by the university president. 2013
Sharif University of Technology, Tehran, Iran

Recipient of the Grant for Undergraduate Studies. 2012 - 2017
from the Iran's National Elites Foundation, for outstanding academic success.

Publications

Massively Parallel Algorithms for String Matching with Wildcards SPAA'21
MohammadTaghi HajiAghayi, Hamed Saleh, Saeed Seddighin, Xiaorui Sun
Preprint available at arXiv:1910.11829

Computational Analyses of the Electoral College: Campaigning is Hard But Approximately Manageable AAAI'21
Sina Dehghani, Hamed Saleh, Saeed Seddighin, Shang-Hua Teng

Streaming and Massively Parallel Algorithms for Edge Coloring ESA'19 DISC'19
Soheil Behnezhad, Mahsa Derakhshan, MohammadTaghi Hajiaghayi Marina Knittel, Hamed Saleh

Externalities and Fairness WWW'19
Mohammad Ghodsi, Hamed Saleh, Massoud Seddighin

In Progress Papers

Massively Parallel Suffix Trees in progress 2021
Jacob Gilbert, MohammadTaghi HajiAghayi, Hamed Saleh, Saeed Seddighin

Adaptive Massively Parallel Constant-round Tree Contraction submitted 2020
MohammadTaghi HajiAghayi, Marina Knittel, Hamed Saleh, Hsin-Hoa Su

Work Experience

Professional Software Engineer

- **Software Engineer Intern** at Page Bites Inc. 2020
  Member of the team developing and maintaining the instant messenger imo.im.
- **Software Engineer** at Cafe Bazaar Co. 2016 - 2018
  Member of the Search project of Cafe Bazaar, dealing with Information Retrieval and Natural Language Processing challenges.
- **Software Engineer** at Lyan Co. 2015
  Started an online marketing platform startup.
- **Android Developer Intern** at Rahnema Co. 2013
  Participant in Rahnema Co. Android Development Camp.

Open Source Software Developer

- tps with Kian Mirjalali 2017
  A command line tool for preparing programming problems.
- site-admin with Mohammad Amin Khashkhashi Moghadam 2017
  A graphical interface for monitoring and managing nodes in a contest hall. [1]

[1] tps and site-admin are part of IOI 2017 tools developed by the organizing team

- HelliJudge with Mahrud Sayrafi. 2011
  A programming competition judge with focus on security.

Teaching Experience

Teaching Assistant 2018 - present
University of Maryland, College Park
- Discrete Structures, Spring 2020
- Introduction to Algorithms, Spring 2018, Spring 2019, and Fall 2019
- Introduction to Computer Systems, Fall 2018

Teaching Assistant 2014 - 2016
Sharif University of Technology
- Compiler Design, Spring 2016
- Design and Analysis of Algorithms, Fall 2015 and Spring 2014
- Object Oriented Design, S. Foroughi, Fall 2015

Technical Skills

- **Operating Systems**: Mac, Linux, and Windows.
- **Typesetting**: LaTeX, Microsoft Office, and LibreOffice.
- **Programming Languages**: C/C++, Python, Go, Java, Bash, and MATLAB.
- **Web Technologies**: HTML5, CSS3, Django, node.js, and angularjs.
- **DevOps tools and other**: Docker, Kubernetes, CI tools, Spark, redis, Mongodb, Rabbitmq, Celery.

Other Activities

External reviewer for computer science conferences. 2018 - present
COCOON'18, *ISAAC'18*, *WWW'20*, *FSTTCS'20*, *SODA'21*, *ESA'21*, *DISC'21*.

Member of **Scientific Committee** of Programming Competitions 2013 - 2017
Designing contests and authoring problems with algorithmic theme
IOI 2017, ACM-ICPC Regional Contests, INOI, and Sharif AI Challenge

last modified on Jun, 2021