Sharareh Alipour

Department of computer science,
Tehran Institute for Advanced Studies (TeIAS)
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Research Interests

Design and Analysis of Algorithms, Approximation and Randomized Algorithms, Sublinear Algorithms, Computational Geometry, Graph Theory and its Applications, Combinatorial Optimization, Data Science, Distributed Computing.

Employments

Department of computer science,
Tehran Institute for Advanced Studies (TeIAS), Tehran, Iran

Assistant Professor — Feb. 2022 – now

School of computer science,
Institute for research in fundamental sciences, Tehran, Iran

Senior Postdoc fellow — Nov. 2019 – Feb. 2022

School of computer science,
Institute of science and technology, Vienna, Austria

Postdoc visitor — May. 2019 – May. 2020

School of computer science,
Institute for research in fundamental sciences, Tehran, Iran

Postdoc fellow — Nov. 2016 – Nov. 2019

Education

Sharif University of Technology (SUT), Tehran, Iran

Ph.D. in Computer Engineering — Sept. 2011 – September. 2016
Thesis: "Efficient Algorithms for Visibility Testing of Objects and Counting"
Advisor: Dr. Mohammad Ghodsi

M.S. in Computer Science — Sept. 2009 – August. 2011
Thesis: "Visibility Counting and Testing"
Advisor: Dr. Alireza Zarei

B.S. in Computer Science — Sept. 2005 – August. 2009
Thesis: "Study of Hurst Parameter Estimation of Network Traffic"
Advisor: Dr. Amir Hossein Jahangir

Publications

Alipour, S., Jafari, A., Mazidi, M., Najafian, A., "Partial coloring complex, vertex decomposability and Tverberg's theorem with constraints", Accepted in *SODA*, 2024

Alipour, S., Abolnejadian, M., Taeb, K., "Leveraging ChatGPT for Adaptive Learning through Personalized Prompt-based Instruction: A CS1 Education Case Study", Accepted in *CHI Extended Abstracts*, 2024

Alipour, S., Elahimanesh, N., Tefagh, M., Neshayi, P., Jahanzad, S., Morasafar, P., " Improving Grading Fairness and Transparency with Decentralized Collaborative Peer Assessment ", Accepted in *CSCW*, 2023

Alipour, S., Salari, M., " Brief Announcement: Distributed Algorithms for Minimum Dominating Set Problem and Beyond, a New Approach", *DISC*, 40:1-40:3, 2022

Alipour, S., Elahimanesh, S.,Neshayi, P., Jahanzad, S., Morasafar, P., "A Blockchain Approach to Academic Assessment ", *CHI Extended Abstracts*, 306:1-306:6, 2022

Alipour, S., Parsa, S., "Hardness of Segment Cover, Contiguous SAT and Visibility with Uncertain Obstacles" *Accepted in Discrete Mathematics, Algorithms and Applications, DMAA*, 2022

Alipour, S., "Improvements on approximation algorithms for clustering probabilistic data", *Knowl. Inf. Syst.*, 63(10): 2719-2740, 2021

Alipour, S., "On guarding polygons with holes", *CCCG*, 348-350, 2021

Sheikhi, F., Alipour, S., "A Geometric Algorithm for Fault-Tolerant Classification of COVID-19 Infected People". *CSICC*, 1-5, 2021

Alipour, S, "Approximation algorithms for probabilistic k-center clustering", *ICDM 2020*, 1-11, 2020

Alipour, S., Parsa, S., "Hardness of Segment Cover, Contiguous SAT and Visibility with Uncertain Obstacles" *COCOA*, 350-363. 2020

Alipour, S., Jafari, A., "Brief Announcement: A local constant approximation factor algorithm for minimum dominating set of certain planar graphs", *SPAA*, 501-502, 2020

Alipour, S., Jafari, A., Saghafian, M., "Upper bounds for k-tuple (total) domination numbers of regular graphs", *Bulletin of Iranian mathematical society*, 2019

Alipour, S., Jafari, A., "Upper bounds for domination numbers of graphs using Turán's theorem and Lovász local lemma", *Graphs and Combinatorics*, 2019

Abam, M., Alipour, S., Ghodsi, M., Mahdian, M, "Visibility Testing and Counting for Uncertain Segments". *Theoretical Computer Science*, 779: 1-7, 2019

Alipour, S., Jafari, A, "Improvements on the k-center problem for uncertain data", *PODS*,

423-433, 2018.

Alipour, S., Ghodsi, M., Jafari, A, "Randomized approximation algorithms for Planar visibility counting problem", *Theoretical Computer Science*, 707: 46-55, 2018

Abam, M., Alipour, S., Ghodsi, M., Mahdian, M, "Visibility Testing and Counting for Uncertain Segments", *CCCG*, 84-88, 2017

Jafari, A.,Alipour, S,"On Chromatic Number of Generalized Kneser Graphs", *Contributions to Discrete Mathematics*, 12(2), 2017

Alipour, S., Ghodsi, M., Gudukbay, U., Golkari, M, "An Approximation Algorithm for Computing the Visibility Region of a Point on a Terrain and Visibility testing", *Applied Geomatics*, 9 (1), 53-59, 2017

Alipour, S., Ghodsi, M., Jafari, A, "An improved Constant-Factor Approximation Algorithm for Planar Visibility Counting Problem", *COCOON* , 209–221, 2016

Abam, M., Alipour, S., Ghodsi, M., Mahdian, M, "Visibility Testing and Counting for Uncertain Segments", *EUROCG*, 2016

Alipour, S., Ghodsi, M., Zarei, A., Pourrezza, M, "Visibility testing and counting", *Information Processing Letters*, 115(5), 649–654 doi:10.1016/j.ipl.2015.03.009 , 2015

Nouri Bygi, M., Daneshpajouh, S., Alipour, S., Ghodsi, M.," Weak visibility counting in simple polygons", *J. Computational Applied Mathematics* 288: 215-222, 2015

Alipour, S., Ghodsi, M., Gudukbay, U., Golkari, M, "An Approximation Algorithm for Computing the Visibility Region of a Point on a Terrain and Visibility testing", *VISSAPP*, 2014

Alipour, S., Ghodsi, "Approximation and randomized method for Visibility Counting Problem", *International symposium on Computer Science and Software Engineering- Tehran- Iran*, 2013

Alipour, S., Mahmoodian, E. S., Mollaahmadi, E, "On decomposing complete tripartite graph into 5cycles", *Australasian Journal of Combinatorics, Volume 54, 289–301*, 2012

Alipour, S., Zarei, A, "Visibility testing and counting", *Frontiers in Algorithmics and Algorithmic Aspects in Information and Management Lecture Notes in Computer Science, Volume 6681, 343—351*, 2011

Teaching and Work Experiences

Teaching, Advanced algorithms, TeIAS Fall 2023 Teaching, Advanced data mining, TeIAS

Spring 2023 Teaching, Advanced algorithms, TeIASFall 2022 Teaching, Discrete mathematics, Sharif university of Technology, International campus, Kish Spring 2022
Teaching, Computer Programming Language, c and c++, Sharif university of Technology, International campus, Kish Fall 2021
Teaching, Data structures and algorithms, Sharif university of Technology, Tehran Fall 2020
Teaching, Distributed algorithms seminar (Graduate course), Sharif university of Technology, Tehran Spring 2018
Teaching, Data structures and algorithms, Sharif university of Technology, Tehran Fall 2018
Teaching, Computer Programming Language, c and c++, Shahid Beheshti university of Technology, Tehran Fall 2018
Teaching, Graph theory (Graduate course), Sharif university of Technology, Tehran Fall 2017
Teaching, Discrete math, Sharif university of Technology, Tehran Spring 2017
Teaching, Computer Programming Language, Python, Sharif university of Technology, Tehran International Campus Fall 2016
Teaching, Discrete math, Sharif university of Technology, Tehran Spring 2016
Teaching Assistant, Advanced Combinatorics (Graduate course), Sharif university of Technology, Tehran Spring 2016
Teaching, Computer Programming Language, Java, Sharif university of Technology, Tehran International Campus Fall 2015
Teaching, Data structure and algorithms, Sharif university of Technology, Tehran Fall 2015
Teaching Assistant, Advanced Graph Theory and Randomized Algorithms(Graduate course), Sharif University of Technology, Tehran Fall 2014
Mentoring, REU program in DIMACS, Rutgers University Summer 2014
Teaching Assistant, Randomized Algorithms (Graduate course), Sharif University of Technology, Tehran Fall 2013
Teaching, Computer Programming Language, Java and Pascal, Sharif university of Technology, Tehran Fall 2013
Teaching, Computer Programming Language, Pascal, Sharif university of Technology, Tehran International Campus 2012-2013
Teaching Assistant, Computational Geometry(Graduate course), Sharif University of Technology, Tehran Spring 2012
Teaching, Computer Simulation, Computer Architecture, Artificial Intelligence, Network and Operating Systems, Zarandieh Institute of Higher Education, Zarandieh, Iran 2010-2011
Working as a game designer for children, Dibaye Publishing Company, Tehran, Iran 2009-2011
Teaching, Computer Programming Language C++, Farzanegan high school, Urmia, Iran Summer 2005

Invited Talks

Visibility Counting Problem, Women in Theory (WIT) Workshop, Princeton University June 2014
Visibility, Graph Theory and Probability, REU program, DIMACS, Rutgers University July 2014

Grants and funds

Travel fund to participate in the Topology and Geometry in a Discrete Setting workshop, ICERM, Brown university 2016
Travel fund to participate in the Women in Theory workshop, Princeton University 2014

Honors and Awards

Ranked 1^{st} among Iran's Ph.D. university entrance exam participants 2011
Ranked 22^{nd} among 1,000 participants in M.S. program entrance exam for Computer Science. 2009
Ranked 921^{st} among 343,000 of Iran's university entrance exam participants 2005