

Bahram Sadeghi Bigham

Current Position

- Associate Professor, Department of Computer Sciences and Information Technology, Institute for Advanced Studies in Basic Sciences (IASBS), Zanjan, Iran.
- Dean of Department of Computer Science and Information Technology



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Publons : <https://publons.com/researcher/3537627/bahram-sadeghi-bigham/>

Mendeley: <https://www.mendeley.com/reference-manager/library/all-references/>

Available at:

SSRN: https://papers.ssrn.com/sol3/cf_dev/AbsByAuth.cfm?per_id=4213898

ZENODO: <https://zenodo.org/deposit?page=1&size=20>

Bepress : <https://works.bepress.com/bahram-sadeghi/>

Figshare: https://figshare.com/authors/bahram_sadeghi_bigham/10493012

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Research Area:

- Robotics and Motion Planning
- Algorithms and Computational Geometry
- E-Learning and education
- Data Science (Trajectory Data Sets)
- Similarity Measures
- Medical Applications of AI

Education

Year	Degree/Certificate	Institute Attended
2008-2009	Postdoctoral Fellow (Computer Science)	Cardiff University (UK)
2004-2008	PhD., (Computer Science)	Amirkabir University of Technology
1998–2000	MSc (Applied Mathematics)	Amirkabir University of Technology
1993-1996	B.Sc. (Pure Mathematics)	Birjand University, Birjand , Iran

Career details

Year	Designation	Institute
2018 up to now	Dean of Department of CS and IT	Inst. For Adv. Studies in Basic Sciences (IASBS)
2016 up to 2018	Associate Professor at CS and IT	Inst. For Adv. Studies in Basic Sciences (IASBS)
2008 up to 2016	Assistant Professor at CS and IT	Inst. For Adv. Studies in Basic Sciences (IASBS)
2005 up to 2011	Dean of Dep. of IT	Joint program (Heriot Watt University (UK) and IASBS) in Tehran
2005 up to 2012	Dean of Department of CS and IT	Inst. For Adv. Studies in Basic Sciences (IASBS)

Invited, Keynote Speaker

Year	Designation	Conference
2019	Invited Speaker	11 th Winter School on Computational Geometry Amirkabir univ. (International)
2018	Invited Speaker	10 th Winter School on Computational Geometry Amirkabir univ. (International)
2017	Invited Speaker	Department of Computer Science, Tarbiyat Modarres univ.
2017	Invited Speaker	9 th Winter School on Computational Geometry Amirkabir univ. (International)
2016	Invited Speaker	4 th Conference on Computer Science New Topics (Alzahra Univ.): Robotics and Geometry
2016	Instructor (Short Course)	Seljuk Univ. (Turkey): Computational Geometry
2015	Invited Speaker	7 th Winter School on Computational Geometry Amirkabir univ.. (International)
2014	Invited Speaker	6 th Winter School on Computational Geometry

2014	Invited Speaker	Amirkabir univ.. (International) 2 th Conference on Computer Science New Topics (Alzahra Univ.): Robot Motion Planning
2013	Invited Speaker	5 th Winter School on Computational Geometry Amirkabir univ.. (International)
2013	Invited Speaker	1 st Conference on Computer Science New Topics (Alzahra Univ.): From Computer Science to Society
2011	Invited Speaker	3 rd Winter School on Computational Geometry
2012	Invited Speaker	4 th Winter School on Computational Geometry Amirkabir unv. (International)
2012	Invited Speaker	4 th Winter School on Computational Geometry Amirkabir unv. (International)

Services

Year	Designation	Conference
2019	General Chair, member of Steering Committee	International Conference on Contemporary Issues in Data Science 2019 (CiDaS), Institute for Adv. Studies in Basic Sciences, Zanzan, IR
2018	Scientific Committee	CICIS Conference (Kharazmi Univ., Tehran)
2014	Scientific Committee	CSCCIT Conference (Tabriz Univ.)
2012	Chairman & Scientific Committee	Contemporary Issues in Computer and Information Sciences (CICIS 2012) (International)
2012	Scientific Committee	CUBE 2012 Pune (India) (International)
2011	Chairman & Scientific Committee	Contemporary Issues in Computer and Information Sciences (CICIS 2011) (International) Amirkabir univ.. (International)
2010	Chairman & Scientific Committee	Contemporary Issues in Computer and Information Sciences (CICIS 2010) (National-Persian)

Teaching Experiences:

- Robot Motion Planning
- Advanced Computational Geometry
- Computational Complexity
- Graph Theory
- Data Mining
- Algorithms
- Data Structure
- Artificial Intelligence
- E-learning
- Image Processing
- Discrete Mathematics
- Numerical Analysis
- Programming (C)
- Linear Algebra

Accomplished National Projects:

Year	Designation	Organization
2021	E-learning model for Art Education in Iran	Art Education and Planning Bureau
2012	Rating Iran made software (Funded through IT and Digital Media center in Iran)	Information Technology and Digital Media Development Center
2012	An expert system for automated short answer questions scoring (Funded through Ministry of science, research and Technology)	Iranian University Entrance Exams Organization

Patents

- Intelligent assistant system for mammograms (for detecting breast cancer), Bahram Sadeghi Bigham and Farzaneh Moradkhani, Patent No: 1393/03/37-83119, 2014.

Publications

Books & Book Chapters

Authored:

- Book title: **Proceedings of the International Conference on Contemporary Issues in Data Science**, Series title: Lecture Notes on Data Engineering and Communications Technologies Editors: Mahdi Bohlouli, Bahram Sadeghi Bigham, Zaha Narimani, Mahdi Vasighi, Ebrahim Ansari, Springer, 2019.
- **Motion Planning for Autonomous Robots**, (in Persian) (In Progress, Expected release: 2020).
- **Proceedings of the Third International Conference on Contemporary Issues in Computer and Information Sciences(CICIS 2012)**, Bahram Sadeghi Bigham (editor), BrownWalker Press (USA), 2012.
- Book Chapter: **A New Approach for Fingerprint Matching Based on Singular Points Detection**, Rohollah Moosavi Tayebi, Samaneh Mazaheri, Bahram Sadeghi Bigham, 04/2011; DOI:10.1007/978-3-642-19712-3_31, Advanced Electrical and Electronic Engineering, Publisher: Springer-Verlag Berlin Heidelberg, Editors: J. Lee, 2012, Germany

Translation (to Persian):

- **Computational Geometry - Algorithms and Applications**. Mark de Berg, Otfried Cheong, Marc van Kreveld, and Mark Overmars, Springer-Verlag, third edition, 2008.



Journal Papers

1. [Minimum landmarks for robot localization in orthogonal environments](https://doi.org/10.1007/s12065-021-00616-8), B. Sadeghi Bigham, S. Dolatikalan, A. Khastan, *Evolutionary Intelligence*, 2021, <https://doi.org/10.1007/s12065-021-00616-8>
2. [Automatic Suspicious Lesions Segmentation based on Variable-Size Windows in Mammography Images](#), Bahram Sadeghi, Meysam Karimi, Samaneh Mazaheri, *Health and Technology* 11.1 (2021): 99-110.
3. [GSR: geometrical scan registration algorithm for robust and fast robot pose estimation](#), F Shamsfakhr, BS Bigham, *Assembly Automation*, 2020.
4. [Polar Diagram of Points with Moving Pole](#), Sadeghi Bigham B. and Rabbani F., *Journal of Information and Telecommunication Technology*, 41.41 (2020): 97.
5. [A polynomial time algorithm for big data in a special case of minimum constraint removal problem](#), Sadeghi Bigham, B., Noorzadeh, F., Khodayifar, S. *Evolutionary Intelligence*, Volume 13, Issue 2, 1 June 2020, Pages 247-254
6. [Measuring similarity for query in geometric data](#), BS Bigham, RA Langroudi, *SN Applied Sciences* 1 (10), 1193, 2019
7. [Selecting Smart Strategies Based on Big Data Techniques and SPACE Matrix \(FASE model\)](#), Mohammad Ali FARAJIAN, Shahriar MOHAMMADI, Bahram SADEGHI BIGHAM, Farhad SHAMS, *Cumhuriyet Science Journal*, Year 2019, Volume 40, Issue 1, Pages 253 – 264
8. [Indoor mobile robot localization in dynamic and cluttered environments using artificial landmarks](#), Shamsfakhr, F. Sadeghi Bigham, B. Mohammadi, A. *Engineering Computations (Swansea, Wales)*, Volume 36, Issue 2, 11 March 2019, Pages 400-419
9. [A Survey on Measurement Metrics for Shape Matching based on Similarity, Scaling and Spatial Distance](#), B. Sadeghi Bigham and Samaneh MAzaheri, A book Chapter in "Proceedings of the International Conference on Contemporary Issues in Data Science, Series title: Lecture Notes on Data Engineering and Communications Technologies, Springer, 2019.
10. [Extra: Expertise-boosted model for trust-based recommendation system based on supervised random walk](#), Moghaddam, F. B., Bigham, B. S. *Computing and Informatics*, Volume 37, Issue 5, November 2018, Pages 1209-1230
11. [Soccer Goalkeeper Task Modeling and Analysis by Petri Nets](#), Azadeh Gholami, Bahram Sadeghi Bigham, *Journal of Computer & Robotics* 11 (1), 2018 77-85
12. [A multi-objective market-driven framework for power matching in the smart grid](#), AG Azar, M Afsharchi, M Davoodi, BS Bigham, *Engineering Applications of Artificial Intelligence* 70, 199-215, 2018
13. [A learned soccer goalkeeper petri net model](#), Azadeh Gholami, Bahram Sadeghi Bigham, *2017 Artificial Intelligence and Robotics (IRANOPEN)*, IEEE, 102-108
14. [A new image mining approach for detecting micro-calcification in digital mammograms](#), F. Moradkhani and B. Sadeghi Bigham, *UAAI: Applied Artificial Intelligence*, 31 (3), 411-424 | DOI: 10.1080/08839514.2017.1378082, 2017

15. [A neural network approach to navigation of a mobile robot and obstacle avoidance in dynamic and unknown environments](#), F SHAMSAKHR, BS BIGHAM, Turkish Journal of Electrical Engineering & Computer Sciences 25 (3),2017, 1629-1642
16. [Over-sampling via under-sampling in strongly imbalanced data](#), R. Jamili O., B. Sadeghi Bigham, International Journal of Advanced Intelligence Paradigms, Vol 9 (1), 2017, 58-66
17. [Adaptive Data Hiding Using Pixel-Value-Differencing and LSB Substitution](#), M. Khodaei, B. Sadeghi Bigham, K. Faez, Cybernetics and Systems journal, Volume 47, Issue 8, 16 November 2016, Pages 617-628
18. [The Effect of some Genetic Mutations on Endometriosis Using Data Mining Techniques](#), Bahram L. Sadeghi Bigham B. , Kamali K., The Journal of Zanjan University of Medical Sciences, Vol. 24, No 105, 2016,: 97-106
19. [Design, Implementation and Evaluation of Multi-terminal Binary Decision Diagram based Binary Fuzzy Relations](#), Hamid Alavi Tousi, Bahram Sadeghi Bigham, Journal of Information Systems and Telecommunication, Vol. 4, No 2, 2016: 117-124
20. [ROAD ACCIDENT DATA ANALYSIS: A DATA MINING APPROACH](#) , Farzaneh Moradkhani, Bahram Sadeghi Bigham, Somaye Ebrahimkhani, Indian Journal of Scientific Research 05/2014; 3(3):437443.
21. [The Complex Case of Online Privacy for Iranian Users of Social Networks](#), Arash Shaghaghi, Bahram Sadeghi Bigham, International Journal of Computer & Information Technologies (IJOCIT), 2014,2(2), 426-440
22. [Using Voronoi Diagrams to Solve a hybrid Facility Location Problem with attentive Facilities](#), A. Didandeh, B. Sadeghi Bigham, M. Khosravian, F. Bakhshandegan, Information Sciences , Volume 234, 10 June 2013, Pages 203-216
23. [A combinatorial cooperative-tabu search feature reduction approach](#), E. Ansari, M.H. Sadreddin, B. Sadeghi Bigham, F. Alimardani, Scientia Iranica , Volume 20, Issue 3, June 2013, Pages 657-662
24. [Ten Steps for Software Quality Rating Considering ISO/IEC](#) , Bahram Sadeghi Bigham, Hassan Alizadeh, Hossein Afsari, Journal of Information Systems and Telecommunication. 09/2013; 1(3):191-195.
25. [Tiling a Rectangular Area Using a Set of Unique Squares](#) , Jalal Khairabadi, Bahram Sadeghi Bigham, Rebrvar Hosseini, Zohreh Mohammad Alizadeh, International Journal of Computer & Information Technologies (IJOCIT). 11/2013; 1(2):97-105.
26. [Computer Assisted Assessment \(CAA\) and Electronic Problem Based Learning](#), Mohammad Jafarabadi Ashtiani, Mansoor Nomanof, Bahram Sadeghi Bigham, Akram Madadi, Life Science Journal, Volume 10, Issue 1, March 2013, Pages 726-730
27. [Near-pole polar diagram of objects and duality](#), Bahram Sadeghi Bigham, Marzieh Eskandari, Maryam Tahmasbi, Journal of Computer Science, Volume 3, Issue 3, May 2012, Pages 127-131
28. [Computer as Mathematics Facilitator in Problem Based Learning](#), Jafarabadi Ashtian, Nomanof, Sadeghi Bigham, Journal of American Science. 01/2012; 8(9):436-441.
29. [The one-round weighted Voronoi Game](#), Zeinab Hassani, Bahram Sadeghi Bighamb, Marzieh Eskandari, AWERProcedia Information Technology & Computer Science. 01/2012

30. [Good's history and trust in electronic commerce](#). Parvin Abbasi, Bahram Sadeghi Bigham, Saeed Sarencheh, Procedia CS. Volume 3, 2011, Pages 827-832
31. [An applicable master plan to develop city's information technology infrastructure.](#), Saeed Sarencheh, Bahram Sadeghi Bigham , Procedia CS. 01/2011; 3:840-847.
32. [Fingerprint Matching Using an Onion Layer Algorithm of Computational Geometry Based on Level 3 Features](#), Samaneh Mazaheri, Bahram Sadeghi Bigham, Rohollah Moosavi Tayebi, Part of the Communications in Computer and Information Science book series (CCIS, volume 166), 2011, pp 302-314.
33. [On the Number of Guards in Sculpture Garden Problem](#), M. Eskandari, A. Mohades, B. Sadeghi Bigham , World Applied Sciences Journal. 01/2010; 10(10):1255-1263.
34. [Near Pole Polar Diagram of points and its Duality with Applications](#), Bahram Sadeghi Bigham Ali Mohades, Basic Science and Applied Engineering. 01/2010; 20(70-E):79-84.
35. [Dynamic polar diagram](#). Bahram Sadeghi Bigham, Ali Mohades, Lidia M. Ortega, Inf. Process. Lett. Volume 109, Issue 2, 31 December 2008, Pages 142-146.
36. [Polar Diagram with respect to a Near Pole](#), Bahram Sadeghi Bigham, Ali Mohades, 23rd European Workshop on Computational Geometry EWCG07, 2007, 206-209.

Conference Papers

1. [Measurement Metrics Review for Shapes Matching based on Similarity, Scaling and Spatial Distance](#), Bahram Sadeghi Bigham and, Samaneh Mazaheri, 5th international conference on Contemporary issues in Data Science (CiDaS 2019), book chapter in Lecture Notes on Data Engineering and Communications Technologies.
2. [Extracting an English-Persian Parallel Corpus from Comparable Corpora](#). Akbar Karimi, Ebrahim, Ansari, Bahram Sadeghi Bigham, Eleventh International Conference on Language Resources and Evaluation, LREC 2018 - 11th International Conference on Language Resources and Evaluation2019, Pages 3477-3482
3. [Kinetic Nearest Neighbor Search in Black-Box Model](#), Bahram SadeghiBigham, Maryam Nezami and Marziyeh Eskandari, Iranian Conference on Computational Geometry (ICCG 2018), 63-66, Tehran, Iran, February 27, 2018
4. [A learned soccer goalkeeper Petri net model](#), Gholami, Bigham, B.S, 7th Conference on Artificial Intelligence and Robotics, IRANOPEN 201723 June 2017, Article number 7956451, Pages 102-108.
5. [one round voronoi game on grids](#), Rebvar Hosseini, Mehdi Khosravian, Mansoor Davoodi, Bahram Sadeghi Bigham, 32nd European Workshop on Computational Geometry, 2016, Lugano, Switzerland.
6. [Minimum Constraint \(Unit Axis Aligned Squares\) Removal in Robot Motion Planning](#), f.noorizadeh, b_sadeghi_b, s.khodayifar, 3rd Conference on Recent Innovations in Electrical and Computer Engineering (ICEEC), 2016

7. [A Greedy Agent-Based Resource Allocation in the Smart Electricity Markets](#), Armin Ghasem Azar, Mansoor Davoodi, Mohsen Afsharchi, Bahram Sadeghi Bigham, IFIP Advances in Information and Communication Technology Volume 436, 2014, Pages 150-161
8. [The Use of Social Network Tools in Iran and the Impact of Improper Communication and Transparency of Information Security and Privacy](#), Arash Shaghaghi, Bahram Sadeghi Bigham, International Conference CITaDIM, 2013
9. [Privacy in the Age of Smartphone A Study of Iranian User's Standard and Habits](#), Arash Shaghaghi, Bahram Sadeghi Bigham, International Conference CITaDIM, 2013.
10. [J2ME And Mobile Database Design](#), Seyed Rebvar Hosseini, Lida Ahmadi, Bahram Sadeghi Bigham, Jalal Khairabadi, Armin Ghasem Azar, The Third International Conference on Contemporary Issues in Computer and Information Sciences, 2012
11. [Selection of Effective Factors in Estimating of Customers respond to Mobile Advertising by using AHP](#), Mehdi Seyyed Hamzeh, Bahram Sadeghi Bigham, Reza Askari Moghadam, In 3th Conference of CICIS2012, 2012
12. [Using Fuzzy Classification System for Diagnoses of Breast Cancer](#), Maryam Sadat Mahmoodi, Bahram Sadeghi Bigham, Adel Najafi, This paper is presented at In 3th Conference of CICIS2012, 2012
13. [Tiling Finite Planes](#), Khairabadi, Sadeghi Bigham, Hosseini, Mohammad Alizadeh, The Third International Conference on Contemporary Issues in Computer and Information Sciences, 2012, 528-531
14. [Solving Dominating Set Problem In Unit Disk Graphs By Genetic Algorithms](#), Azadeh Gholami, Mahmoud Shirazi, Bahram Sadeghi Bigham, Contemporary Issues in Computer and Information Sciences (CICIS 2012); 05/2012 , 498-503
15. [A new fingerprint matching approach using level 2 and level 3 features](#). Rohollah Moosavi Tayebi, Samaneh Mazaheri, Bahram Sadeghi Bigham, Fourth International C* Conference on Computer Science & Software Engineering, C3S2E 2011, Montreal, Quebec, Canada, May 16-18, 2011, Proceedings; 01/2011, Pages 73-81.
16. [Musical Instrument Recognition Using Artificial Neural Network](#), Mahmoud Shirazi, Alireza Khanteimoori, Bahram Sadeghi Bigham, The Second International Conference on Contemporary Issues in Computer and Information Sciences, 2011
17. [Fingerprint Matching Using an Onion Layer Algorithm of Computational Geometry Based on Level 3 Features](#). Samaneh Mazaheri, Bahram Sadeghi Bigham, Rohollah Moosavi Tayebi, Digital Information and Communication Technology and Its Applications International Conference, Volume 166 CCIS, Issue PART 1, 2011, Pages 302-314
18. [Forum's Information Extraction Algorithms](#), Saeed Sarencheh, Bahram Sadeghi Bigham, Vidiasagar Potdar, Bahman Ghandchi, Nazanin Firoozeh, Elham A. Yegane, First Meeting on "Contemporary Issues in Computer and Information Science, 2010, Page10-13.
19. [Optimal Triangulation Using an Evolutionary Algorithm](#), Malihe Jahani , Bahram Sadeghi Bigham ; Abbas Askari, Proceedings - 2010 10th International Conference on Computational Science and Its Applications, ICCSA 2010, 2010, Pages 81-85

20. [An ant colony algorithm for the minimum weight triangulation](#), Jahani, M. Bigham, B. S. Askari, A, Proceedings - 2010 10th International Conference on Computational Science and Its Applications, ICCSA 20102010, Pages 81-85
21. [An optimal solution for dynamic polar diagram](#), Ehsanfar, E. Bigham, B. S. Madadi, N. Proceedings of the 22nd Annual Canadian Conference on Computational Geometry, CCCG 20102010, Pages 51-54
22. [Phishing guard and antivirus: A new approach](#), Sadeghi Bigham, B. Chernin, S. Madadi, A. Madadi, N. Tavajoh, P. Proceedings of the 2008 International Conference on Security and Management, SAM 20082008, Pages 309-312
23. [Data Encryption Based On Protein Synthesis](#). Seyed Reza Alisobhani, Ferial Mehrabanpoor, Yaser Nosrati, Bahram Sadeghi Bigham, Proceedings of the 2008 International Conference on Genetic and Evolutionary Methods, GEM 20082008, Pages 278-283
24. [Solving semantic problems in" chaff and winnowing" by using cryptography](#), Mohamadrezaei, S. Bigham, B. S. Proceedings of The 2007 International Conference on Security and Management, SAM'072007, Pages 152-156
25. [Applications of Chaos Model in Software Development Process](#). Elnaz Bigdeli, Zeinab Bahmani, Bahram Sadeghi Bigham, Proceedings of the 2007 International Conference on Software Engineering Research & Practice, SERP 2007, Volume I, June 25-28, 2007, Las Vegas Nevada, USA; 01/2007

Students (Current)

1. Saha Mehri, Learning Methods for Trajectory Prediction, PhD student, IASBS
2. BentolHoda Amirkhani, **Trajectory Clustering and Frechet Distance**, MSc degree, IASBS
3. Simin Mehdizadeh, **Detecting the reason of trip using trajectory data set**, MSc degree, IASBS
4. Majid Hassani, **Detecting POI using some google map data set**, MSc degree, IASBS
5. Sahar Sharifi (Multi Robot Localization) , MSc degree, IASBS
6. Elnaz Ragheb (Fuzzy Pose Estimation for Robot), MSc degree, IASBS
7. Shima Maleki (new member in my group) , MSc degree, IASBS