

Curriculum Vitae

Hala M. Alshamlan, PhD

Personal Information

- **Name:** Hala Mohammad Alshamlan
- **Nationality:** Saudi
- **Occupation** Associate Professor at King Saud University, Research Fellow at Massachusetts Institute of Technology
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Education:

- **2016-2019** Postdoctoral Fellow, Mechanical Engineering Department, Massachusetts Institute of Technology (MIT).
- **2010- 2015** Doctor of Philosophy, Computer Science Department, College of Computer and Information Sciences King Saud University, Riyadh, Saudi Arabia.
- **2005- 2007** Master degree of Computer Science, Computer Science Department, College of Computer and Information Sciences King Saud University, Riyadh, Saudi Arabia.
- **2000-2004** Bachelor of Science in Information Technology, Information Technology Department, College of Computer and Information Sciences King Saud University, Riyadh, Saudi Arabia.

Work Experience:

- **2020 – Present:** Associate Professor in Information Technology Department college of Computer and Information Science, King Saud University.
- **2016- Present** Research Fellow, Mechanical Engineering Department, Massachusetts Institute of Technology (MIT).
- **2015 – 2020:** Assistant professor in Information Technology Department college of Computer and Information Science, King Saud University
- **2016-2017:** Researcher in Mechanical Engineering Department, Massachusetts Institute of Technology (MIT)
- **2007 -2015** Lecturer in Information Technology Department college of Computer and Information Science, King Saud University.

- **2012 – 2022** Researcher in Bioinformatics research group
- **2009- 2013** Exams Unite Supervisor in National Center For Assessment in Higher Education.\b2007- 2010 Trainer in Riyadh Technical College.

Skills

- **Arabic Language:** Excellent (native).
- **English Language:** Fluent
- **Expert in Artificial Intelligent Algorithm:** Teach AI course since 2016 until now for Information Technology department students, college of Computer and Information Science, King Saud University
- **Expert in Data Analytics and Data Science.**
- **Expert in using Generative AI in Business Intelligent (BI).**

Research Interest:

Artificial Intelligent, Business Intelligence , Genitive AI, Data Science , Smart City, Bioinformatics, Image Processing, Evolutionary Algorithms, Data Mining, Dimensionality Reduction, Microarray Data Analysis, and Cancer Diagnosis.

Awards:

Listed among the top 2% of the world's most highly cited scientists. This recognition is based on the updated database that provides standardized citation metrics for researchers. For more detailed information about Hala Alshamlan's ranking and the citation indicators, you can refer to the dataset directly using the following URL: <https://elsevier.digitalcommonsdata.com/datasets/btchxktzyw/6>.

Internships

Aug 2014 - Visiting Scholar in Prof. Dr. Mark Borodovsky laboratory, Georgia Tech Center for Bioinformatics and Computational Genomics, Georgia Institute of Technology, Atlanta, GA, USA.

Performance Development Courses

1. Sexual Misconduct prevention and Awareness, **MIT**, Cambridge, USA, 09/13/2016
2. Performance Development: Manager's Role, Cambridge, **MIT**, USA, 11/08/2016
3. Everyone Leadership, **MIT**, Cambridge, USA, 11/10/2016

4. Goal Setting Workshop, **MIT**, Cambridge, USA, 11/14/2016
5. Correction Action, **MIT**, Cambridge, USA, 11/15/2016
6. Fundamentals: Post-Award Administration, **MIT**, Cambridge, USA, 11/16/2016
7. Managing Change and Transition, **MIT**, Cambridge, USA, 02/14/2017.
8. Managing with Situational Leadership, **MIT**, Cambridge, USA, 03/09/2017
9. Writing a Great Resume and Cover Letter **MIT**, Cambridge, USA, 03/07/2017

Training

1. Introduction to R: Basics, Plots, and RNA-Seq Differential Expression Analysis, **Harvard Catalyst**, Cambridge, USA, May 2016 (Three Weeks).
2. New Faculty Program Training from Staff and Educational Development Association (SEDA), Riyadh, Saudi Arabia, 2017, (36 Hours)

Certificate

1. Executive Certificate in Management and Leadership, **MIT Management Sloan School**, Cambridge, USA, July 2017.
2. Executive Certificate in Leading and Innovation, **MIT Management Sloan School**, Cambridge, USA, July 2018.

Publication. (Some of my research paper)

1. **Alshamlan H**, Omar S, Aljurayyad R, Alabduljabbar R. Identifying Effective Feature Selection Methods for Alzheimer's Disease Biomarker Gene Detection Using Machine Learning. *Diagnostics*17(13).(2023) ,p.1771.
2. **Alshamlan H**, Alghofaili G, ALFulayj N, Aldawsari S, Alrubaiya Y, Alabduljabbar R. Promoting Sustainable Travel Experiences: A Weighted Parallel Hybrid Approach for Personalized Tourism Recommendations and Enhanced User Satisfaction. *Sustainability* 15(19). **2023**, p.14447.
3. Alabduljabbar R, Almutawa M, Alkathiri R, Alqahtani A, **Alshamlan H**. An Interactive Augmented and Virtual Reality System for Managing Dental Anxiety among Young Patients: A Pilot Study. *Applied Sciences*13(9). **2023**,P.5603.
4. Almazruea H, **Alshamlan H**. A comprehensive survey of recent hybrid feature selection methods in cancer microarray gene expression data. *IEEE Access*. (2022).
5. AlMazruea, H. and **Alshamlan, H**. A New Algorithm for Cancer Biomarker Gene Detection Using Harris Hawks Optimization. *Sensors*, 22(19), (2022), p.7273.
6. AlMazruea, H. and **Alshamlan, H.**, 2022, September. A New Approach for Selecting Features in Cancer Classification Using Grey Wolf Optimizer. In *The International Conference on Deep Learning, Big Data and Blockchain (DBB 2022)* (pp. 53-64). Cham: Springer International Publishing.

7. **Alshamlan, H.** An Effective Filter Method Towards the Performance Improvement of FF-SVM Algorithm. *IEEE Access*, 9, (2021), pp.140835-140840.
8. Alabduljabbar, R. and **Alshamlan, H.** Intelligent Multiclass Skin Cancer Detection Using Convolution Neural Networks. *CMC-COMPUTERS MATERIALS & CONTINUA*, 69(1), (2021) pp.831-847.
9. **Alshamlan, H.** Finding Biomarker Genes for Type 2 Diabetes Mellitus using Chi-2 Feature Selection Method and Logistic Regression Supervised Learning Algorithm. *INT JOURNAL COMPUTER SCIENCE & NETWORK SECURITY* 21(2),(2021), pp.9-13.
10. **Alshamlan, H.**,AL-Nojaidi, H., AlSuliman, M., Alabduljabbar, R. A Comparative Study on Predicting Autism Spectrum Disorders (ASD) Using Gene Expression and Machine Learning. *INT JOURNAL COMPUTER SCIENCE & NETWORK SECURITY* 20(11),(2021), pp.66-73.
11. Almugren, N. and **Alshamlan, H.** New bio-marker gene discovery algorithms for cancer gene expression profile. *IEEE Access*, 7,(2019), pp.136907-136913.
12. Almugren, N. and **Alshamlan, H.**, 2019, July. FF-SVM: new firefly-based gene selection algorithm for microarray cancer classification. In *2019 IEEE conference on computational intelligence in bioinformatics and computational biology (CIBCB)* (pp. 1-6). IEEE.
13. Almugren, N., and **Alshamlan, H.** A survey on hybrid feature selection methods in microarray gene expression data for cancer classification. *IEEE access*, 7, (2019) ,78533-78548.
- 14.
15. **Ashamlan, H. M.**, Badr, G. H., and Alohal, Y. A. The performance of bio- inspired evolutionary gene selection methods for cancer classification using microarray dataset. *International Journal of Bioscience, Biochemistry and Bioinformatics* 4, 3 (2014), 166–170.
16. **Alshamlan, H.**, Badr, G., and Alohal, Y. Abc-svm: Articial bee colony and svm method for microarray gene selection and multi class cancer classication. To appear in *International Journal of Machine Learning and Computing* (2015). (EI Index)
17. **Alshamlan, H.**, Badr, G., and Alohal, Y. mrmr-abc: A hybrid gene selection algorithm for microarray cancer classification. *BioMed Research International* (2015). (**ISI Index, IF: 2.71**)
18. **Alshamlan, H. M.**, Badr, G. H., and Alohal, Y. A. Genetic bee colony (gbc) algorithm: A new gene selection method for microarray cancer classification. *Computational biology and chemistry* 56 (2015), 49–60. (**ISI Index, IF: 1.60**)
19. **Alshamlan, H. M.**, Badr, G. H., and Alohal, Y. A study of cancer microarray gene expression profile: Objectives and approaches. *Lecture Notes in Engineering and Computer Science*, vol. 2 LNECS,pp. 1324–1329, ICSBB 13, London, U.K., 3-5 July, 2013.
20. **Alshamlan, H.**, Badr, G., and Alohal, Y. A Study for Effective Binary Classification Approaches for Cancer Microarray Gene Expression Profile . Presented at the 9th International Symposium on Bioinformatics Research and Applications, Charlotte, ISBRA 2013, NC, USA, May 20-22, 2013.
21. **Alshamlan, H.**, Badr, G., and Alohal, Y. Comparative study of gene selection methods for microarray cancer classification. In *DaEng* (2015), Lecture Notes in Electrical Engineering, Springer. (**ISI Index**)
22. **Alshamlan, H.**, Badr, G., and Alohal, Y. A comparative study of cancer classification methods using microarray gene expression profile. In *DaEng* (2013), vol. 285 of *Lecture Notes in Electrical Engineering*, Springer, pp. 389–398. (**ISI Index**).
23. **Alshamlan, H.**, Badr, G., and Alohal, Y. Microarray gene selection and cancer classification method using artificial bee colony and svm algorithms (abcsvm). In *DaEng* (2015), Lecture Notes in Electrical Engineering, Springer. (**ISI Index, best paper award**).
24. **Hala M. Alshamlan** and Mohammed El Bachir Menai, “ Solving Shortest Hamiltonion Path Problem Using DNA Computing “, The Seventh

International Multi-Conference on Computing in the Global Information Technology, Venice , Italy, 2012, pp.76-82.

25. **Hala M. AlShamlan** and Mohammed El Bachir Menai, “ Molecular Computing Viability for Solving Computational Problems (Future and Challenges)”, *International Journal of Computer and Communication Engineering, Vol. 1, No. 3, September 2012, pp.191-195.*
26. **Hala M. Al-Shamlan**, Abdullah S. Al-Mudimigh,” The Change Management Strategies and Processes for Successful ERP Implementation: A Case Study of MADAR” , JCSI International Journal of Computer Science Issues, Vol. 8, Issue 2, March 2011 ,pp.399-407 (ISI Index).
27. **Hala Alshamlan** , Addulla Almodimig ,” The Change Management Strategies and Processes for Successful ERP Implementation” , 2011 2nd International Conference on Innovative Computing and Communication and 2011 Asia-Pacific Conference on Information Technology and Ocean Engineering (CICC-ITOE 2011) Macao, China, March 5-6, 2011.
28. **Hala Alshamlan** and Ali El-Zaart, “Breast Cancer Computer Aided Diagnosis (CAD) System”. International Conference on Image and Video Processing and Computer Vision (IVPCV-11). LasVegas, Nevada, USA, July 17-20, 2011.
29. **Hala Alshamlan** and Ali El-Zaart, " Texture Feature Extraction for Breast Cancer Mammography Images”, International Conference on Image and Video Processing and Computer Vision (IVPCV-10). Orlando, FL, USA, July 12-14, 2010.
30. **Hala Alshamlan** and Ali El-Zaart, " Feature Extraction Values for Breast Cancer Mammography Images ”, IEEE Explore Digital library, IEEE International Conference On Bioinformatics and Biomedical Technology, 2010. Pp. 335 – 340 (Indexed by EI Compendex and ISI Proceeding).