Nailah Al-Madi, PhD

Associate Professor
King Hussein Faculty for Computing Sciences
Princess Sumaya University for Technology
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Research interests

Data Mining, Artificial Intelligence, Evolutionary Computation and Nature-inspired Algorithms, MapReduce/Hadoop, Wireless Sensor Networks/ IoT.

Education

2011-2014 **PhD, Computer Science**
North Dakota State University, USA
Dissertation Title: "Improved Genetic Programming Techniques For Data Classification"
GPA 4.00

2006 - 2009 **MSc, Computer Science**
Jordan University of Science and Technology, Jordan
Thesis Title: "Chain Based Distributed Routing Algorithms For Wireless Sensor Networks"
Cumulative average **85.12**

2002 - 2005 **BSc, Computer Information System**
Al Albayt University, Jordan
Cumulative average 82.2 (**Ranked 1st**)

Experience

2020 – Present **Head of Data Science department**

Data Science Department
Princess Sumaya University for Technology

2019 – Present **Associate Professor**

Computer Science Department
Princess Sumaya University for Technology

2014 – 2019 **Assistant Professor**

Computer Science Department
Princess Sumaya University for Technology

2011 - 2014 **Research Assistant**

Computer Science Department
North Dakota State University, Fargo, ND, USA
Duties include:
- Conduct literature and database searches;
- Continue to update knowledge and develop skills;
- Write up results of own research;

- Contribute to the production of research reports and publications;
- Present information on research progress and outcomes to bodies supervising research.
- Make use of standard research techniques and methods;
- Analyze and interpret the results of own research and generate original ideas based on outcomes.

2009 - 2011	**Full Time Instructor**

Computer Science Department
Middle East University, Amman, Jordan
Duties include:
- Instructor for Advance Computer Skills (MS-Word, MS-Excel, MS-PowerPoint and Problem Solving)
- Instructor for Visual Basic.
- Instructor for C++ Programming Course (Fundamentals Level).

2009 (Jun-Sept)	**Part Time Instructor**

Computer Science Department
University of Jordan, Amman, Jordan
Duties include:
- Instructor for Advance Computer Skills (MS-Word, MS-Excel, MS-Frontpage)

2006 (Mar-Sep)	**IT Administrator**

Real Estate Development Company, Amman, Jordan
Duties include:
- Constructing the Information System Department,
- Design and Execute the Databases in the Company,
- Develop software needed by the company work,
- Control and Maintain the Systems and Computers in the Company.

2005 (December)	**Course Lecturer**

Al Al-Bayt University, Jordan
Duties include:
- Teach a short course on "Introduction to Java 2 Micro Edition (J2ME)"

Publications

1. Othman Istaiteh, Tala Owais, **Nailah Al-Madi**, Saleh Abu-Soud, *"Machine Learning Approaches for COVID-19 Forecasting"*, The International Conference on Intelligent Data Science Technologies and Applications (IDSTA2020), 2020

2. Eman Al Nagi, **Nailah Al-Madi**, "*Predicting Students Performance in Online Courses using Classification Techniques",* The International Conference on Intelligent Data Science Technologies and Applications (IDSTA2020), 2020

3. Altarazi A., **Al-Madi N.,** and Awad F., *"Geometric-Based Localization for Wireless Sensor Networks",* proceeding of *11th International Conference on Information and Communication Systems (ICICS)*, Irbid, Jordan, pp. 108-112, 2020.

4. Aljarah I, Habib M, Faris H, **Al-Madi N**, Heidari AA, Mafarja M, Abd Elaziz M, Mirjalili S. A "*Dynamic Locality Multi-Objective Salp Swarm Algorithm for Feature Selection"*. Computers & Industrial Engineering. 2020.

5. Al-Mousa, A., Sababha, B.H., **Al-Madi, N.,** Barghouthi, A. and Younisse, R. *"UTSim: A framework and simulator for UAV air traffic integration, control, and communication",* International Journal of Advanced Robotic Systems, *16*(5), p.1729881419870937, 2019.

6. **Al-Madi, N.,** Faris, H., & Mirjalili, S.. "*Binary multi-verse optimization algorithm for global optimization and discrete problems"*. International Journal of Machine Learning and Cybernetics, 1-21, 2019.

7. Aljarah, I., Faris, H., Mirjalili, S., **Al-Madi, N.,** Sheta, A., & Mafarja, M.. "*Evolving neural networks using bird swarm algorithm for data classification and regression applications"*. Cluster Computing, Springer, 2019.

8. Mais Yasin, **Nailah Al-Madi,** "*Improved Swarm Intelligence Optimization using Crossover and Mutation for Medical Classification*", proceeding of ICTCS, 2019.

9. **Nailah Al-Madi,** Hossam Faris, Ruba Abukhurma, "*Cost-Sensitive Genetic Programming for Churn Prediction and Identification of the Influencing Factors in Telecommunication Market*", International journal of advanced science and technology, 2018.

10. Amaal R. Al Shorman, Hossam Faris, Pedro A. Castillo, J.J. Merelo, and **Nailah Al-Madi**, "*The Influence Of Input Data Standardization Methods On The Prediction Accuracy Of Genetic Programming Generated Classifiers"*, The 10th International Joint Conference On Computational Intelligence, 2018

11. Mais Yasin, **Nailah Al-Madi**, Nadim, Obeid, "*Optimizing Neural Networks using Dragonfly Algorithm for Medical Prediction*", The 8th international conference on Computer Science and Information Technology (CSIT), 2018.

12. Ruba Al-Jundi, Mais Yasin, **Nailah Al-Madi**, "*Thunderstorms Prediction using Genetic Programming",* To appear in The 2nd International Computer Sciences and Informatics Conference (ICSIC), 2017.

13. Ibrahim Alafeef, Fahed Awad, **Nailah Al-Madi**, "*Energy-Aware Geographic Routing Protocol with Sleep Scheduling for Wireless Multimedia Sensor Networks"*, 14th International Conference on Smart Cities: Improving Quality of Life Using ICT & IoT (HONET-ICT), 2017.

14. Mais Yasin, Ruba Al-Jundi, **Nailah Al-Madi**, "*Optimized ANN-ABC for Thunderstorms Prediction"*, to appear in The International Conference on new Trends in Computing Sciences (ICTCS), Octobar,2017.

15. Dima Suleiman, Arafat Awajan, **Nailah Al-Madi**, "*Deep Learning Based Technique for plagiarism detection in Arabic texts"*, to appear in The International Conference on new Trends in Computing Sciences (ICTCS), Octobar,2017.

16. **Al-Madi Nailah,** "*Mike Preuss: Multimodal optimization by means of evolutionary algorithms"*. Genetic Programming and Evolvable Machines (Springer), Volume 17, Issue 3, pp 315-316. 2016

17. Aljarah I., Faris H., Mirjalili S. and **Al-Madi N.** "*Training radial basis function networks using biogeography-based optimizer"*. Neural Computing and Applications (Springer). pp 1-25. 2016.

18. Faris H., Aljarah I., **Al-Madi N.** and Mirjalili S. "*Optimizing the Learning Process of Feedforward Neural Networks Using Lightning Search Algorithm"*. International Journal on Artificial Intelligence Tools.), Volume 25, Issue 3=6, pp 1650033 (32 pages).2016

19. Ghaith Bilbeisi, **Nailah Al-Madi**, Fahed Awad, "*A Multi-Robot Path Planning and Obstacle Avoidance Algorithm*", In Proceedings of IEEE Jordan Conference on Applied Electrical Engineering and Computing Technologies (IEEE AEECT '15), 2015

20. **Nailah Al-Madi**, Ibrahim Aljarah, and Simone A. Ludwig, "*Parallel Clustering Glowworm Swarm Optimization algorithm Based on MapReduce*", Proceedings of IEEE Symposium series on computational intelligence (SSCI), Florida, USA, December, 2014.

21. **Nailah Al-Madi** and Simone A. Ludwig, "*Scaling Genetic Programming for Data Classification using MapReduce Methodology*", Proceedings of Fifth World Congress on Nature and Biologically Inspired Computing (IEEE NaBIC), Fargo, ND, USA, August, 2013.

22. **Nailah Al-Madi** and Simone A. Ludwig, "*Segment-based Genetic Programming*", Proceedings of the Genetic and Evolutionary Computation Conference (ACM GECCO'13), Amsterdam, the Netherlands, July, 2013.

23. **Nailah Al-Madi** and S. A. Ludwig, "*Improving Genetic Programming Classification For Binary And Multiclass Datasets*", Proceedings of the IEEE Symposium Series on Computational Intelligence (SSCI), Singapore, April 2013.

24. **Nailah Al-Madi** and S. A. Ludwig, "*Adaptive Genetic Programming applied to Classification in Data Mining*", Proceeding of Fourth World Congress on Nature and Biologically Inspired Computing (IEEE NaBIC), Mexico City, Mexico, Nov. 2012.

Awards and Honors

- **Distinguished Teacher Award**, Princess Sumaya University for Technology, (**2019**).

- **Doctoral Dissertation Assistantship (DDA) Award** by Advancing Science Excellence in North Dakota (EPSCoR's) – National Science Foundation (NSF). (**2013**)

- Selected to be a member of **Phi Kappa Phi society**, which is the USA nation's oldest, largest and most selective honor society, as one of the top 10% of students. (**2012**)

- **Ranked first in BSc Graduates** of Computer Information Systems department, Al Albayt University. (**2005**)

Funded Projects

- A member of the research project **"Exploiting Big Data Methods for Building Arabic Semantic Graph"** which is funded by Scientific Research Support Fund, Jordan, 2019

- A member of the managerial committee or the international project **"Jordan opportunity for virtual innovative teaching and learning (JOVITAL)"** which is co-funded by the Erasmus+ Program of the European Union.

Professional Activities

- **Scientific Committee:** The International Conference on new Trends in Computing Sciences (ICTCS'17), and I(CTCS'19).

- **Organizing Committee:** The Fifth World Congress on Nature and Biologically Inspired Computing (IEEE NaBIC'13).

- **Organizing Committee:** The Fifth International Conference on Computational Aspects of Social Networks (IEEE CASoN'13).

- **International Program Committee:** The Fifth Computer Science & Electronic Engineering Conference (IEEE CEEC'13).

- Different Committees at department, faculty and university levels, Princess Sumaya University for Technology, such as research activities, ABET and quality assurance, social activities, e-learning system committee (University level), IRB committee (University level)

Professional Affiliations

- IEEE Computer Machinery Society.
- The Association for Computing (ACM).

Teaching

- **BSc program:** Object Oriented Programming, Data structure and introduction to algorithm, Database systems, Programming in Java, Visual Programming, Computer Skills, Object Oriented Programming Lab, Database systems Lab.
- **MSc program:** Advanced Database Systems, Data Mining.

MSc Supervision and committee membership

- **Supervision:**
  1- Improved Swarm Intelligence Optimization with MapReduce for Data Classification, Mais Yasin, 2018/2019.
  2- Biometrics Continuous Authentication for Detecting Compromised Account on Facebook, Rawan Qatawneh, 2017/2018.
  3- Energy-Aware Protocol for routing and path maintenance for wireless multimedia sensor networks, Ibrahim Al-Afeef, 2017/2018.
  4- Geometric-Based Wireless Sensor Network Localization Algorithm, Ala'a Altarazi, 2017/2018.
- **Served in many MSc examination committees.**
- **Served in many PhD's proposal and examination committees.**

Graduation Projects Supervision:

1. **CeliacD**, Noor Ofaishat, Mahmoud Zwairi, and Dana Jorashi, 2020.
2. **SumsUp**, Mustafa Abu Rmailah and Husam Ajour, 2020.
3. **FoodiesJo**, Mohammed Hasan and Mohammed Radwan, 2020
4. **Investjo**, Shereen Barouqa and Aya Abu Hantash, 2019
5. **Tawlat**, Ehab Malak and Yousef Malak, 2019
6. **Icloset**, Malik Said, Aws Al-Safarini, Laith Al-Barghothi, 2019
7. **Restless Souls Battleroyale Multiplayer Survival Game**, Ziad Abusaleh and George Marashilian, 2018.
8. **Iris Detection for Heath Care Systems**, Muhannad Zakria and Belal Kushha. 2018.
9. **Self Driving Car; A real-time system for autonomous driving,** Ibrahim Mousa, Laith Al-Rachwani, and Mohammed Amarnah, 2018.
10. **Predicting Thunderstorms Using Optimized Neural Network with Artificial Bee Colony Algorithm**, Mais Yasen and Ruba Aljundi, 2017 (Won 2nd place in National Technology Parade 2017)
11. **A Model Packing Algorithm for 3D Printers**, Mahmoud Hammouri, Moath Sadaqa, Muhannad Al-Haj Ali, 2017
12. **PSUT Gate (University social network)**, Ahmad Al-Lahham, Hisham Al-Zuraiqi, Rula Mardawi, 2016
13. **Swarm Intelligence Algorithms for Robot Path Planning**, Ghaith Bilbeisi, Osama Daraghme, 2015.

Programming Languages

Java, Python, C++, J2ME, Oracle, Visual basic, Visual Basic.Net, ASP.Net, HTML, some knowledge in PHP and Others.

Software Packages

Hadoop MapReduce API, R statistical Software, WEKA Data Mining software, Matlab, Java Genetic Algorithms Package, OMNET++ network simulator.

Attributes

Self-motived, hard worker and able to work well with people at all levels.