



# Dr. Raneem Qaddoura, PhD

Assistant Professor  
School of Computing and Informatics  
Al Hussein Technical University (HTU)  
Amman, Jordan

[raneem.qaddoura@htu.edu.jo](mailto:raneem.qaddoura@htu.edu.jo), [raneem.qaddoura@gmail.com](mailto:raneem.qaddoura@gmail.com)

[LinkedIn](#) | [Google Scholar](#) | [Scopus](#) | [ORCID](#)

Updated: 16/2/2023

## SUMMARY

- Assistant Professor of Data Science and Artificial Intelligence at Al Hussein Technical University (HTU)
- 16+ years of overall experience: 7+ years of experience in academic institutions and 9+ years in the industry
- PhD of Computer Science, MSc of Information Systems, and BSc of Computer Information Systems - The University of Jordan - GPA: 3.92 / 4, GPA: 4 / 4, and GPA: 3.92 / 4, respectively.
- Papers published in JCR, ISI, and Scopus Journals, Book Chapters, and Conferences. Research interests involve machine learning and data science fields.
- The taught courses include Data Science Programming, Data Mining, Database Design and Development, Website Design and Development, Electronic commerce, and Research project.
- Skills in programming languages [Python, JAVA, PHP], Frameworks and libraries for Data science [Scikit learn, Pandas, Numpy, matplotlib, Keras, transformers, ClicData ...etc.], DBMS [MySQL, Oracle, and MongoDB], web [Node.js, JavaScript, JQuery, CSS, HTML, Django, Flask, Express, EJS, React.js, JQuery, OAF, and ADF], project management [Project Server, MS project], and mobile [React Native].

## WORK EXPERIENCE

### Academic Experience (7+ years)

#### Assistant Professor

School of Computing and Informatics  
Al Hussein Technical University (HTU)

2021 - 2022

#### Assistant Professor

Full-time Instructor  
Information Technology  
Philadelphia University

2020 - 2021

2015 - 2020

### Industry Experience (9+ years)

#### Data Science Consultant

Altibbi

2020 - 2021

#### Project Management Office (PMO) Manager

Realsoft Advanced Applications

2014 - 2016

#### Technical Team Leader

#### Senior Web Developer

SNSEO - Net Advantage

2012 - 2014

2010 - 2012

#### Application Developer

INTRASOFT Middle East

2007 - 2009

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## EDUCATION

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### PhD of Computer Science - GPA: 3.92 / 4

2016 - 2020

*The University of Jordan - Amman, Jordan*

**Dissertation Title:** A Design and Implementation of a Clustering Algorithm based on the Nearest Point

**Specialty:** Machine Learning and Data Science

### Master of Information Systems - GPA: 4 / 4

2007 - 2009

*The University of Jordan - Amman, Jordan*

**Thesis Title:** Managing Resource Constrained Project Scheduling

### Bachelor of Computer Information Systems - GPA: 3.92 / 4

2003 - 2007

*The University of Jordan - Amman, Jordan*

**Graduation Project:** Application Builder

### Tawjihi (General Secondary Education Certificate) - Average Score: 95.2%

2002 - 2003

*Jordan International School - Amman, Jordan*

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## TEACHING COURSES

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- Data Science Programming, Data Mining, Database Design and Development, Special Topics in Python Programming
- Website Design and Development, Electronic Commerce, Web Client-side Technology, Web Server-side Technology
- Algorithms
- Research Project

## PUBLICATIONS AND REVIEWS

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**34 Published papers / 337 Google Scholar citations / 10 Google Scholar h-index**

**17 Journal papers / 3 Book chapters / 14 Conference papers / 29 Articles review**

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### Journals

1. Rong Zheng, Abdelazim G Hussien, Raneem Qaddoura, Heming Jia, Laith Abualigah, Shuang Wang, and Abeer Saber. A multi-strategy enhanced african vultures optimization algorithm for global optimization problems. *Journal of Computational Design and Engineering*, 10(1):329–356, 2023
2. Majd Alqarqaz, Maram Bani Younes, and Raneem Qaddoura. An object classification approach for autonomous vehicles using machine learning techniques. *World Electric Vehicle Journal*, 14(2):41, 2023
3. Abdelazim G Hussien, Fatma A Hashim, Raneem Qaddoura, Laith Abualigah, and Adrian Pop. An enhanced evaporation rate water-cycle algorithm for global optimization. *Processes*, 10(11):2254, 2022
4. Raneem Qaddoura and Maram Bani Younes. Temporal prediction of traffic characteristics on real road scenarios in amman. *Journal of Ambient Intelligence and Humanized Computing*, pages 1–16, 2022. (Q1, IF: 7.104 (2020))
5. Ruba Obiedat, Raneem Qaddoura, Al-Zoubi Ala'M, Laila Al-Qaisi, Osama Harfoushi, Mo'ath Alrefai, and Hossam Faris. Sentiment analysis of customers' reviews using a hybrid evolutionary svm-based approach in an imbalanced data distribution. *IEEE Access*, 10:22260–22273, 2022. (Q1, IF: 3.367 (2020))
6. Ruba Obiedat, Laila Al-Qaisi, Raneem Qaddoura, Osama Harfoushi, and Ala'M Al-Zoubi. An intelligent hybrid sentiment analyzer for personal protective medical equipments based on word embedding technique: The covid-19 era. *Symmetry*, 13(12):2287, 2021. (Q2, IF: 2.713 (2020))

7. Ruba Obiedat, Osama Harfoushi, Raneem Qaddoura, Laila Al-Qaisi, and Ala'M Al-Zoubi. An evolutionary-based sentiment analysis approach for enhancing government decisions during covid-19 pandemic: The case of jordan. *Applied Sciences*, 11(19):9080, 2021. (Q2, IF: 2.679 (2020))
8. Raneem Qaddoura, Ala'M Al-Zoubi, Hossam Faris, and Iman Almomani. A multi-layer classification approach for intrusion detection in iot networks based on deep learning. *Sensors*, 21(9):2987, 2021. (Q1, IF: 3.576 (2020))
9. Iman Almomani, Raneem Qaddoura, Maria Habib, Samah Alsoghayer, Alaa Al Khayer, Ibrahim Aljarah, and Hossam Faris. Android ransomware detection based on a hybrid evolutionary approach in the context of highly imbalanced data. *IEEE Access*, 9, 2021. (Q1, IF: 3.367 (2020))
10. Raneem Qaddoura, Ala'M Al-Zoubi, Iman Almomani, and Hossam Faris. A multi-stage classification approach for iot intrusion detection based on clustering with oversampling. *Applied Sciences*, 11(7):3022, 2021. (Q2, IF: 2.679 (2020))
11. Maria Habib, Mohammad Faris, Raneem Qaddoura, Manal Alomari, Alaa Alomari, and Hossam Faris. Toward an automatic quality assessment of voice-based telemedicine consultations: A deep learning approach. *Sensors*, 21(9):3279, 2021. (Q1, IF: 3.576 (2020))
12. Raneem Qaddoura, Hossam Faris, Ibrahim Aljarah, and Pedro A Castillo. Evocluster: An open-source nature-inspired optimization clustering framework. *SN Computer Science*, 2(3):1–12, 2021. (Extended Version)
13. Maria Habib, Mohammad Faris, Raneem Qaddoura, Alaa Alomari, and Hossam Faris. A predictive text system for medical recommendations in telemedicine: A deep learning approach in the arabic context. *IEEE Access*, 2021. (Q1, IF: 3.367 (2020))
14. Raneem Qaddoura, Hossam Faris, and Ibrahim Aljarah. An efficient evolutionary algorithm with a nearest neighbor search technique for clustering analysis. *Journal of Ambient Intelligence and Humanized Computing*, pages 1–26, 2020. (Q1, IF: 7.104 (2020))
15. Raneem Qaddoura, Waref Al Manaseer, Mohammad AM Abushariah, and Mohammad Aref Alshraideh. Dental radiography segmentation using expectation-maximization clustering and grasshopper optimizer. *Multimedia Tools and Applications*, 2020. (Q1, IF: 2.757 (2020))
16. Raneem Qaddoura, Hossam Faris, and Ibrahim Aljarah. An efficient clustering algorithm based on the k-nearest neighbors with an indexing ratio. *International Journal of Machine Learning and Cybernetics*, 11(3):675–714, 2020. (Q1, IF: 4.012 (2020))
17. Ibrahim Aljarah, Maria Habib, Neveen Hijazi, Hossam Faris, Raneem Qaddoura, Bassam Hammo, Mohammad Abushariah, and Mohammad Alfawareh. Intelligent detection of hate speech in arabic social network: A machine learning approach. *Journal of Information Science*, 2020. (Q1, IF: 3.282 (2021))

## Book Chapters

18. Raneem Qaddoura, Hossam Faris, Ibrahim Aljarah, and Mirjalili Seyedali. A grey wolf based clustering algorithm for medical diagnosis problems. *Evolutionary Data Clustering: Algorithms, and Applications. Algorithms for Intelligent Systems.*, 2021. ISBN: 978-981-33-4190-6
19. Raneem Qaddoura, Hossam Faris, Ibrahim Aljarah, and Iman Almomani. A classification approach based on evolutionary clustering and its application for ransomware detection. *Evolutionary Data Clustering: Algorithms, and Applications. Algorithms for Intelligent Systems.*, 2021. ISBN: 978-981-33-4190-6
20. Raneem Qaddoura and Nameer N El-Emam. Privacy preservation tools and techniques in artificial intelligence. In *Cybersecurity: Ambient Technologies, IoT, and Industry 4.0 Implications*, page 161. CRC Press, 2021

## Conferences

21. Raneem Qaddoura and Mariam Biltawi. Improving fraud detection in an imbalanced class distribution using different oversampling techniques. In *Engineering International Conference on Electrical, Energy, and Artificial Intelligence (EICEEI)*, 2022

22. Najwan Al-Farouqi, Muayad Al-Athami, and Raneem Qaddoura. Predicting autism disorder of an imbalanced dataset using neural network. In *International Conference on Computational Intelligence and Communication Networks*, 2022
23. Mariam Biltawi and Raneem Qaddoura. The impact of feature selection on the regression task for life expectancy prediction. In *The International Conference on Emerging Trends in Computing and Engineering Applications*, 2022
24. Raneem Qaddoura, Maram Bani Younes, and Azzedine Boukerche. Machine learning based prediction with parameters tuning of multi-label real road vehicles characteristics. In *Proceedings of the 19th ACM International Symposium on Performance Evaluation of Wireless Ad Hoc, Sensor, & Ubiquitous Networks*, pages 41–47, 2022
25. Anh T Dang, Raneem Qaddoura, Ala'M Al-Zoubi, Hossam Faris, and Pedro A Castillo. Evocc: An open-source classification-based nature-inspired optimization clustering framework in python. In *International Conference on the Applications of Evolutionary Computation (Part of EvoStar)*, pages 77–92. Springer, Cham, 2022
26. Raneem Qaddoura, Maram Bani Younes, and Azzedine Boukerche. Predicting traffic characteristics of real road scenarios in jordan and gulf region. In *Proceedings of the 17th ACM Symposium on QoS and Security for Wireless and Mobile Networks*, pages 115–121, 2021
27. Raneem Qaddoura, Al-Zoubi Ala'M, Iman Almomani, and Hossam Faris. Predicting different types of imbalanced intrusion activities based on a multi-stage deep learning approach. In *2021 International Conference on Information Technology (ICIT)*, pages 858–863. IEEE, 2021
28. Raneem Qaddoura, Hossam Faris, Ibrahim Aljarah, Juan Julián Merelo-Guervós, and Pedro A Castillo. Empirical evaluation of distance measures for nearest point with indexing ratio clustering algorithm. In *12th International Joint Conference on Computational Intelligence*, 2020
29. Raneem Qaddoura, Hossam Faris, Ibrahim Aljarah, and Pedro A Castillo. Evocluster: An open-source nature-inspired optimization clustering framework in python. In *Applications of Evolutionary Computation, Proceedings of the EvoApplications 23rd European Conference on the Applications of Evolutionary and bio-inspired Computation*, pages 20–36. Springer, 2020
30. Raneem Qaddoura and Saher Manaseer. Comparative study for the effect of cpu speed in fog networks. In *2018 Fifth International Symposium on Innovation in Information and Communication Technology (ISIICT)*, pages 1–5. IEEE, 2018
31. Raneem Qaddoura, Alaa Abu-Srhan, Mais Haj Qasem, and Amjad Hudaib. Requirements prioritization techniques review and analysis. In *2017 International Conference on New Trends in Computing Sciences (ICTCS)*, pages 258–263. IEEE, 2017
32. Mais Haj Qasem, Alaa Abu Sarhan, Raneem Qaddoura, and Basel A Mahafzah. Matrix multiplication of big data using mapreduce: a review. In *2017 2nd International Conference on the Applications of Information Technology in Developing Renewable Energy Processes & Systems (IT-DREPS)*, pages 1–6. IEEE, 2017
33. Mais Haj Qasem, Raneem Qaddoura, and Bassam Hammo. Educational data mining (edm): A review. In *New Trends in Information Technology*, page 149, 2017
34. Fawaz Al-Zaghoul, Amjad Hudaib, Raneem Qasem, Qaddoura, Mais Haj, and Alaa Abu Sarhan. A weighted framework for process model selection. In *ISCA 30th International Conference on Computer Applications in Industry and Engineering (CAINE-2017)*, 2017

## Reviews

- IEEEAccess (7 Articles Review)
- Journal of Ambient Intelligence and Humanized Computing (5 Papers Review)
- EvoApplications - International Conference on the Applications of Evolutionary Computation (5 Articles Review)
- SSD'21 - IEEE International Multi-Conference on Systems, Signals and Devices (4 Papers Review)
- IEEE International Multi-Conference on Systems, Signals and Devices (3 Papers Review)
- Journal of Experimental and Theoretical Artificial Intelligence (2 Articles Review)
- Cybernetics and Systems (1 Article Review)
- Neural Processing Letters (1 Article Review)
- SN Computer Science (1 Article Review)

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## PROFESSIONAL ACTIVITIES

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### Research Group

The Evolutionary and Machine Learning (Evo-ML)

**Role:** Core Member

**URL:** <http://evo-ml.com/>

**Page:** <http://evo-ml.com/raneem-qaddoura/>

### Conferences Organization

- A publication Chair of the EvoApplications (part of EvoStar) 26th European Conference on the Applications of Evolutionary and bio-inspired Computation (EvoStar2023) - <http://www.evostar.org/2023/>
- A Chair of a session/member of the program committee of the EvoApplications (part of EvoStar) 25th European Conference on the Applications of Evolutionary and bio-inspired Computation (EvoStar2022) - <http://www.evostar.org/2022/>
- A Chair of a session of the EvoApplications (part of EvoStar) 24th European Conference on the Applications of Evolutionary and bio-inspired Computation (EvoStar2021) - <http://www.evostar.org/2021/>
- Member organizer of the 5th International Symposium on Innovation in Information and Communication Technology (ISIICT'2018) - Organizer

### Talks and Awards

- **Speaker at Women In Data Science (WiDS)**  
Princess Sumaya University for Technology (PSUT) - Amman, Jordan  
11-July-2020
- **Outstanding student by EvoStar2020 - Spain**  
EvoCluster: An Open-Source Nature-Inspired Optimization Clustering Framework in Python  
SPECIES, the Society for the Promotion of Evolutionary Computation in Europe and its Surroundings  
(15-17)-April-2020  
<http://www.evostar.org/2020/outstanding-students-of-2020/>

### Higher-Education Activities

- **Advising:** Najwan Mongid Al-Farouqi, "A machine learning approach for predicting autism disorder", M.Sc. Thesis. Philadelphia University. May 2021.
- **Examination Committees:**
  - Mohammed Y. Al-Hadithi, "Predicting The Coronavirus Infection Using Machine Learning", M.Sc. Thesis. Philadelphia University. May 2021.
  - Abdelqader Waleed Al-Gailany, "Modified classification for brain tumors in Magnetic Resonance Imaging (MRI) using region convolutional neural networks (R-CNN)", M.Sc. Thesis. Philadelphia University. Aug 2020.

### Committees

- Quality Assurance (2022-2023) - Committee Chair and Lead Internal Verifier - Al Hussein Technical University
- Industry Committee Partnership (2022-2023) - Committee Member - Al Hussein Technical University
- Industry Committee Partnership (2021-2022) - Committee Chair - Al Hussein Technical University
- Marks Appeal Committee - Committee Chair - Al Hussein Technical University
- Courses equivalency Committee - Committee Chair - Al Hussein Technical University
- Job Fair committee (2022) - Committee Member - Al Hussein Technical University
- Quality Assurance Committee (2021-2022) - Committee Member - Al Hussein Technical University
- Academic integrity committee(2021-2022) - Committee Member - Al Hussein Technical University
- Quality Assurance Advisory Board - University Level (2020 - 2021) - Advisory Member for Scientific research, creativity and innovation criteria - Philadelphia University

- Quality Assurance Board - Faculty Level (2017 - 2019) - Member of Academic programs criteria - Philadelphia University
- Academic Advising Committee (2015 - 2021) - Committee Chair - Philadelphia University
- Scientific Resources and Library Committee (2015 - 2021) - Committee Chair - Philadelphia University
- Academic and non-academic activities Committee (2015 - 2021) - Committee Member - Philadelphia University
- Study plan Committee (2015 - 2021) - Committee Member - Philadelphia University
- Quality and Quality Control Committee (2015 - 2021) - Committee Member - Philadelphia University
- Research Projects Committee (2015 - 2021) - Committee Member - Philadelphia University
- Student Recruitment Committee (2015 - 2021) - Committee Member - Philadelphia University

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## PROJECTS

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### 34 Projects / 7 companies

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#### **Role: Data Scientist Consultant - Company: Altibbi**

1. Automatic Quality Assessment of Medical Consultations in Arabic
2. Auto-complete of Medical Recommendations in Arabic Context

#### **Role: PMO Manager - Company: Realsoft Advanced Applications**

3. Jordan Sensus for Department of Statistics - Jordan
4. Statistical Systems Project for Sharjah Statistics Center - UAE
5. Comprehensive Survey for National Center for Statistics and Information - Oman
6. Decision Support System for General Secretariat of the Cabinet - Oman
7. Jordan Sensus for Department of Statistics - Jordan
8. Writ Service and Notice System for Ministry of Justice - Jordan
9. Labor Force Survey II for Central Department of Statistics and Information - KSA
10. E-Fawateercom System for Bank al Etihad - Jordan

#### **Role: Technical Team Leader - Company: SNSEO - Net Advantage**

11. Kooora Mobile version <http://m.kooora.com/>
12. SPEED <http://speed.com/>
13. Kooora video
14. Fann
15. Sticky Post
16. Social Kooora
17. Hawaa world signature and tooltip

#### **Role: Senior Web Developer - Company: SNSEO - Net Advantage**

18. Kooora Arab Fantasy Football
19. Bubble Ad server
20. Ad Tab
21. Ad server
22. Kooora Arab Fantasy Football
23. Hawaa world signature and tooltip
24. Euro 2012
25. Blogger Tool
26. Bahrain 11

#### **Role: Application Developer - Company: INTRASOFT middle east**

27. Customizing oracle application pages for Jordan Telecom Group
28. Medical System for Housing Bank and Arab Bank
29. Letter of Guarantee system - requirement gathering
30. Reporting Sheet Automation
31. Document Automatic Archiving
32. Training Oracle Application Framework (OAF) for Jordan Telecom Group - Trainer

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## SKILLS

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1. **Data Science:** Python, ClcData, Scikit learn, Pandas, Numpy, matplotlib, Keras, transformers ...etc.
2. **Programming Languages:** Python, JAVA, PHP.
3. **Database Management Systems:** MySQL, Oracle, SQL server, and MongoDB.
4. **Web development:** Node.js, JavaScript, CSS, HTML, Django (Python), Flask (Python), Express (Node.js), ejs (Node.js), Bootstrap (CSS), Font Awesome (CSS), React (JavaScript), JQuery (JavaScript), OAF (JAVA), ADF (JAVA).
5. **Mobile Development:** React Native
6. **Project Management:** MS Project Server, MS Project.

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## COURSES AND CERTIFICATES

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- Data Analysis Track - Udacity/1 million Jordanian coders (2022)
- Two courses of "Data Scientist with Python" Career Track in DataCamp. 2020
- Project Management Professional training course. Feb 2012.
- Sun Certified Programmer for Java Platform, Standard Edition 5.0. ID: 11/05 SW409182. Nov 2009.
- Business Writing, Intracom Jordan, Amman - Jordan. Oct 2009.
- Presentation skills 101. Intracom Jordan, Amman - Jordan. Jan 2009.
- Effective Email Writing. Intracom Jordan, Amman - Jordan. Apr 2008.

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## REFERENCES

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Available upon Request