Curriculum Vitae
Professor Za'er Salem Mohammad Abu-Hammour

Abu-Hammour is a Professor of Systems and Mechatronics Engineering, specialized in control systems' design, robotic manipulators, computational intelligence, and numerical and data analysis. He is deeply passionate about excellence and innovation in knowledge acquisition and dissemination, particularly in the digital age. Throughout his academic journey, he excelled in both his undergraduate and graduate studies.

For over than 20 years, Professor Abu-Hammour has focused on teaching, research, and development. He developed several globally unique IT products and systems based on artificial intelligence, designed to support automated decision-making and optimize complex systems. His pioneering work includes patenting breakthrough processes in more than 100 countries. He also shared his innovative ideas with his master's and Ph.D. students.

Professor Abu-Hammour is a leading researcher in the field of genetic algorithms and their applications in the MENA region. He is proficient in business and industrial automation, scheduling systems, and computational optimization. He seamlessly integrates academic, industrial, and managerial experiences, benefiting society, the public sector, and the private sector. As an innovator, inventor, developer, and entrepreneur, he excels at turning challenges into opportunities despite of the limited resources. Along his journey, he has been honored with numerous national and international awards recognizing his outstanding achievements.

Personal Data.

Year of Birth	**1969**
Place of Birth	**Salt, Jordan**
Marital Status	**Married**
Number of Children	Four
Nationality	**Jordanian**
Work Address	**Mechatronics Engineering Department** **School of Engineering** **University of Jordan, Amman, Jordan.** **Telephone: - 00-962-6-5355000, ext. 23026**
E-Mail	**zaer@ju.edu.jo, zaer_hr@yahoo.com, zaer_hmr@hotmail.com.**
Mobile Phone	**00-962-777-212223**

Education.

Degree	Field	Institution	Country	Year
Ph.D.	Systems Engineering	Pakistan Institute of Engineering and Applied Sciences[1], Pakistan Atomic Energy Commission.	Pakistan	2002
M.Sc.	Systems Engineering	Pakistan Institute of Engineering and Applied Sciences, Pakistan Atomic Energy Commission.	Pakistan	1998
B.Sc.	Electrical Engineering	Mu'tah University.	Jordan	1991

[1] Pakistan Institute of Engineering and Applied Sciences (PIAES) is the top-ranked Pakistani university in QS World University Ranking 2019 (first Pakistani university, 397 global rank). As of 2017, Pakistan Higher Education Commission rated PIEAS as the first leading engineering university in Pakistan.

Awards.

Award	Occasion	Institution	Country	Year
Certificate of Appreciation	International Patenting Activities.	University of Jordan.	Jordan	2023
Certificate of Appreciation	Research Contributions in Global University Ranking.	University of Jordan.	Jordan	2020
Certificate	Distinguished University Researcher.	University of Jordan.	Jordan	2012
Certificate	First Position Project, Made in Arab World Competition, "Integrated Solar System for Cooling and Heating of Residential Buildings".	Arab Science and Technology Foundation (ASTF).	Egypt	2010
Presidential Gold Medal	First Position with Honors in all Master Programs at the Institute.	Pakistan Institute of Engineering and Applied Sciences, Pakistan Atomic Energy Commission.	Pakistan	1998
Certificate of Merit	Securing "A" score in M.Sc. Systems Engineering.	Pakistan Institute of Engineering and Applied Sciences, Pakistan Atomic Energy Commission.	Pakistan	1998
Certificate of Merit	First Position with Honors in M.Sc. Systems Engineering.	Quaid-I-Azam University.	Pakistan	1998
Royal Prize	First Position with Honors in B.Sc. at the Faculty of Engineering and Second Position Across the University.	Mu'tah University.	Jordan	1991

Citation Data

Criterion	Citation Source/Database			
	ISI Web of Science	Scopus	ResearchGate	Google Scholar
Total citations including self-citations	**1200**	**1577**	**1761**	**2081**
Total citations excluding self-citations	**1108**	**1395**	---	---
h-index including self-citations	**16**	**16**	**20**	**20**
h-index excluding self-citations	---	**14**	**17**	---
Total number of publications	**36**	**40**	**56**	**58**
Number of journal papers	**27**	**30**	**35**	**35**
Number of conference paper	**9**	**10**	**19**	**19**
Other publications	**0**	**0**	**2**	**4**

Date of data collection: 1-9-2024.

Work experience.

Period	*Position*
Nov. 2015 - Present	Professor, Mechatronics Engineering Department[2], School of Engineering[3], University of Jordan, Amman, Jordan.
Nov. 2011 - Nov. 2015	Associate Professor, Mechatronics Engineering Department, Faculty of Engineering, University of Jordan, Amman, Jordan.
Apr. 2010 - Dec. 2018	Founder and General Director, Professional for Energy, Environment, And Water Solutions LLC, Amman, Jordan.
Sep. 2008 - Nov. 2011	Assistant Professor, Mechatronics Engineering Department, Faculty of Engineering, University of Jordan, Amman, Jordan.
Sep. 2006 - Sep. 2008	Founder and chairman of Mechatronics Engineering Department, Faculty of Engineering, University of Jordan, Amman, Jordan.
Oct. 2005 - Sep. 2006	Assistant Professor, Electrical Engineering Department, Faculty of Engineering, University of Jordan, Amman, Jordan.
Mar. 2003 - Aug. 2005	Chairman of Scientific Research and Studies Department, King Abdullah II Design and Development Bureau, Amman, Jordan.
Sep. 1996 - Dec. 2002	Fellow at Pakistan Institute of Engineering and Applied Sciences, Pakistan Atomic Energy Commission, Pakistan.
Jun. 1991 - Sep. 1996	Telecommunication Exchanges Maintenance Officer, Royal Signal Corps, Jordan Armed Forces, Amman, Jordan.

[2] **Mechatronics Engineering B.Sc. program is accredited by the Accreditation Board for Engineering and Technology (ABET) since 2017.**

[3] **Faculty of Engineering has been renamed to School of Engineering as of Feb 2016.**

Development of Globally Unique Artificial intelligent IT systems

IT system	Commercial name	Development Year
Fully Automated Course Timetabling For UNiversities	FACTFUN	2015
An Interactive System for Selecting Senior Leadership Positions in Governments	RPRP (Right Person in Right Place)	2017
An Automated System for the Execution of Appointments and Retirements in Armed Forces	ASEAR-AF	2018

Research Interests.

- ❖ Computational intelligence and optimization.
- ❖ Design and implementation of artificial intelligent IT systems.
- ❖ Business and industrial automation.
- ❖ Data and numerical analysis.
- ❖ Identification and prediction of systems and processes.
- ❖ Design of control systems.

Supervision of Ph.D. students.

Degree	Student name	Institution	Country	Graduation Year
Ph.D. in Mathematics	Ramzi Badarneh	Univ. of Jordan	Jordan	2015
Ph.D. in Mechanical Eng.	Ali Al-Asasfeh	Univ. of Jordan	Jordan	2011
Ph.D. in Mathematics	Omar Abo-Arqoub	Univ. of Jordan	Jordan	2008
Ph.D. in Mathematics	Hussein Jaradat	Univ. of Jordan	Jordan	2006
Ph.D. in Mathematics	Omar Al-Sayed	Univ. of Jordan	Jordan	2006

Patents

1. **Abo-Hammour, Zaer**; A method and apparatus for magnetic/electrostatic /electromagnetic treatment of fluids comprising three phases: the treatment phase, the mixing phase, and the usage phase which are spatially and temporally decoupled; United States Patent Office; US10407627B2, 28 Pages, 2019.

2. **Abo-Hammour, Zaer**; Method and apparatus for indirect magnetic treatment of fluids and gases; United States Patent Office; US9795938B2, 28 Pages, 2017.

3. **Abo-Hammour, Zaer**; A method and apparatus for magnetic/electrostatic /electromagnetic treatment of fluids comprising three phases: the treatment phase, the mixing phase, and the usage phase which are spatially and temporally decoupled; World Intellectual Property Organization; WO/2014/173672, 72 Pages, 2014.

4. **Abo-Hammour, Zaer**; Method and apparatus for indirect magnetic treatment of fluids and gases; World Intellectual Property Organization; WO/2012/156464, 40 Pages, 2012.

Funded projects.

Project title	*Funding Organization*	*Fund (JD)*	*Year*
An automated wireless dual solar-diesel heating system for residential space and water heating.	KAFD[5], KADDB[6]	6450	2007
Vision guided autonomous ground vehicle (image processing and control).	KAFD, KADDB	5350	2008
Vision guided autonomous ground vehicle (actuating and driving).	KAFD, KADDB	7750	2008
Design and construction of a liquid filling machine.	KAFD, KADDB	6000	2009
Laser-guided autonomous vehicle (phase 1).	KAFD, KADDB	9040	2009
Solar air conditioning for residential buildings.	KAFD, KADDB	8000	2009
Laser-guided autonomous vehicle (phase 2).	KAFD, KADDB	8800	2010
Design and construction of a testing setup for solar water heaters.	KAFD, KADDB	4250	2010
Commercial version of the automated dual solar-diesel thermal system for residential space and water heating.	KAFD, KADDB	9360	2010
Design and construction of a multi tank solar water heater system.	KAFD, JOSCO[7]	3900	2010
Smart pharmacy system.	KAFD, KADDB	4950	2012

Reduction of environmental pollution in mining industries using viscosity control system.	KAFD, JOSCO	8740	2012
Design and construction of a thermal compression therapy setup.	KAFD, KADDB	2500	2013

⁵ **KAFD: King Abdullah II Fund for Development.**

⁶ **KADDB: King Abdullah II Design and Development Bureau.**

⁷ **JOSCO: Jordan Oil Shale Company.**

ISI Journal Publications. (Average ISI Impact Factor =1.488)

1. Gharaibeh, Anne A.; Ali, Mansoor H.; <u>Abo-Hammour, Zaer S.</u>; Al Saaideh, Mohammad; Improving Genetic Algorithms for Optimal Land-Use Allocation; Journal of Urban Planning and Development, 147(4), 2021. (ISI Impact Factor 2020 =1.381)

2. Albadarneh, Ramzi B.; <u>Abo-Hammour, Zaer</u>; Alsmadi, Othman; Shawagfeh, Nabil; A Novel Continuous Genetic Algorithm Technique for the Solution of Partial Differential Equations; Italian Journal of Pure and Applied Mathematics, 45, 216-236, 2021. (Emerging ISI Journal in 2021)

3. Khasawneh, Hussam J.; <u>Abo-Hammour, Zaer S.</u>; Al Saaideh, Mohammad I.; Momani, Shaher M.; Identification of Hysteresis Models using Real-Coded Genetic Algorithms; The European Physical Journal Plus, 134(10), article 507, 2019. (ISI Impact Factor 2018 =2.612)

4. Alsmadi, Othman; <u>Abo-Hammour, Zaer</u>; Abu-Al-Nadi, Dia; Saraireh, Saleh; Soft Computing Techniques for Reduced Order Modelling: Review and Application; Intelligent Automation and Soft Computing, 22(1), 125-142, 2016. (ISI Impact Factor 2017 =0.652).

5. Momani, Shaher; <u>Abo-Hammour, Zaer S.</u>; Alsmadi, Othman MK.; Solution of Inverse Kinematics Problem using Genetic Algorithms; Applied Mathematics and Information Sciences; 10(1), 225-233, 2016. (ISI Impact Factor 2013=1.232).

6. Momani, Shaher; Abu Arqub, Omar; Hammad, Ma'mon; <u>Abo-Hammour, Zaer S.</u>; A Residual Power Series Technique for Solving Systems of Initial Value Problems; Applied Mathematics and Information Sciences; 10(2), 765-775, 2016. (ISI Impact Factor 2013=1.232).

7. Alsmadi, Othman M.K.; <u>Abo-Hammour, Zaer S.</u>; A Robust Computational Technique for Model Order Reduction of Two-Time-Scale Discrete Systems via Genetic Algorithms; Computational Intelligence and Neuroscience; Volume 2015, Article ID 615079, 9 pages, 2015. (ISI Impact Factor 2017=1.649).

8. **Abo-Hammour, Zaer**; **Abu Arqub, Omar; Alsmadi, Othman; Momani, Shaher; An Optimization Algorithm for Solving Systems of Singular Boundary Value Problems; Applied Mathematics and Information Sciences; 8(6), 2809-2821, 2014. (ISI Impact Factor 2013=1.232)**

9. **Abo-Hammour, Z.S.**; **Samhouri A.D.; Mubarak Y.; Continuous Genetic Algorithm as a novel solver for Stokes and Nonlinear Navier Stokes Problems; Mathematical Problems in Engineering; Article ID 649630, 18 pages, 2014. (ISI Impact Factor 2017=1.145)**

10. **Alsmadi, Othman M.K.; Saraireh, Saleh S.; Abo-Hammour, Zaer S.; Marzouq, Ali H.; Substructure Preservation Sylvester-based Model Order Reduction with Application to Power Systems; Electric Power Components and Systems; 42(9), 914–926, 2014. (ISI Impact Factor 2017 =1.144)**

11. **Abu Arqub, Omar; Abo-Hammour, Zaer; Numerical solution of systems of second-order boundary value problems using continuous genetic algorithm; Information sciences; Volume 279, 396–415, 2014. (ISI Impact Factor 2017=4.305)**

12. **Alsmadi, Othman M.K.; Abu-Al-Nadi, Dia; Abo-Hammour, Zaer S.; Particle Swarm Optimization for MOR of Singularly Perturbed Systems with Critical Frequency Preservation and Application to Power Systems Simplified Modeling; Journal of Circuits Systems and Computers; 23(5), Article ID 1450073, 20 pages, 2014. (ISI Impact Factor 2017=0.595)**

13. **Abo-Hammour, Zaer**; **Abu Arqub, Omar; Momani, Shaher; Shawagfeh, Nabil; Optimization Solution of Troesch's and Bratu's Problems of Ordinary Type Using Novel Continuous Genetic Algorithm; Discrete Dynamics in Nature and Society; Volume 2014, Article ID 401696, 2014. (ISI Impact Factor 2017=0.757)**

14. **Abu Arqub, Omar; Abo-Hammour, Zaer; Momani, Shaher; Application of continuous genetic algorithm for nonlinear system of second-order boundary value problems; Applied Mathematics and Information Sciences; 8(1), 235-248, 2014. (ISI Impact Factor 2013=1.232)**

15. **Abo-Hammour, Za'er**; **Alsmadi, Othman; Momani, Shaher; Abu Arqub, Omar; A Genetic Algorithm Approach for Prediction of Linear Dynamical Systems; Mathematical Problems in Engineering; Volume 2013, Article ID 831657, 2013. (ISI Impact Factor 2017=1.145)**

16. **Abu Arqub, Omar; Abo-Hammour, Zaer; Al-Badarneh, Ramzi; Momani, Shaher; A Reliable Analytical Method for Solving Higher-Order Initial Value Problems; Discrete Dynamics in Nature and Society; Volume 2013, Article ID 673829, 2013. (ISI Impact Factor 2017=0.757)**

17. **Abu-Al-Nadi, Dia I.; Alsmadi, Othman M.K.; <u>Abo-Hammour, Zaer S.</u>; Hawa, Mohammed F.; Rahhal, Jamal S.;** Invasive weed optimization for model order reduction of linear MIMO Systems; Applied Mathematical Modelling; 37(6), 4570–4577, 2013. (ISI Impact Factor 2017=2.617)

18. **<u>Abo-Hammour, Za'er S.</u>; Alsmadi, Othman M. K.; Al-Smadi, Adnan M.;** ARMA model order and parameter estimation using genetic algorithms; Mathematical and Computer Modelling of Dynamical Systems; 18(2), 201-221, 2012. (ISI Impact Factor 2017=0.586)

19. **Alsmadi, Othman M. K.; <u>Abo-Hammour, Zaer S.</u>; Al-Smadi, Adnan M.A.;** Robust and efficient genetic algorithm for solving a chemical reactor problem: theory, application and convergence analysis; Transactions of the Institute of Measurement and Control; 34(5), 594-603, 2012. (ISI Impact Factor 2017=1.579)

20. **Alsmadi, Othman M. K.; <u>Abo-Hammour, Zaer S.</u>; Al-Smadi, Adnan M.;** Robust model order reduction technique for MIMO systems via ANN-LMI-based state residualization; International Journal of Circuit Theory and Applications; 40(4), 341-354, 2012. (ISI Impact Factor 2017=1.444)

21. **Abu Arqub, Omar; <u>Abo-Hammour, Zaer</u>; Momani, Shaher;** Solving singular two-point boundary value problems using continuous genetic algorithm; Abstract and Applied Analysis; volume 2012; Article ID 205391; 2012. (ISI Impact Factor 2013 = 2.479)

22. **<u>Abo-Hammour, Zaer S.</u>; Alsmadi, Othman M. K.; Al-Smadi, Adnan M.;** Multi-time-scale systems model order reduction via genetic algorithms with eigenvalue preservation; Journal of Circuits Systems and Computers; 20(7), 1403-1418, 2011. (ISI Impact Factor 2017 =0.595)

23. **Alsmadi, Othman M. K.; <u>Abo-Hammour, Zaer S.</u>; Al-Smadi, Adnan M.;** Artificial neural network for discrete model order reduction with substructure preservation; Applied Mathematical Modelling; 35(9), 4620-4629, 2011. (ISI Impact Factor 2017 =2.617)

24. **<u>Abo-Hammour, Zaer S.</u>; Asasfeh, Ali Ghaleb; Al-Smadi, Adnan M.;** A novel continuous genetic algorithm for the solution of optimal control problems; Optimal Control Applications & Methods; 32(4), 414-432, 2011. (ISI Impact Factor 2017=1.614)

25. **<u>Abo-Hammour, Za'er S.</u>; Alsmadi, Othman M. K.; Bataineh, Sofian I.;** Continuous genetic algorithms for collision-free Cartesian path planning of robot manipulators; International Journal of Advanced Robotic Systems; 8(6), 14-36, 2011. (ISI Impact Factor 2017=0.952)

26. **Alsmadi, Othman M. K.; <u>Abo-Hammour, Zaer S.</u>; Al-Smadi, Adnan M.; Genetic algorithm approach with frequency selectivity for model order reduction of MIMO systems; Mathematical and Computer Modelling of Dynamical Systems; 17(2), 163-181, 2011. (ISI Impact Factor 2017=0.586)**

27. **<u>Abo-Hammour, Za'er S.</u>; Albadarneh, Ramzi B.; Saraireh, Mohammad S.; Solution of Laplace equation using continuous genetic algorithms; Kuwait Journal of Science & Engineering; 37(2A), 1-15, 2010. (ISI Impact Factor 2014 = 0.312)**

28. **<u>Abo-Hammour, Z. S.</u>; Yusuf, M.; Mirza, N.M.; Numerical solution of second-order, two-point boundary value problems using continuous genetic algorithms; International Journal for Numerical Methods in Engineering; 61(8), 1219-1242, 2004. (ISI Impact Factor 2017 =2.589)**

29. **<u>Abo-Hammour, Z. S.</u>; Mirza, N.M.; Mirza, S.M.; Cartesian path generation of robot manipulators using continuous genetic algorithms; Robotics and Autonomous Systems; 41(4), 179-223, 2002. (ISI Impact Factor 2017=2.638)**

ISI conference publications

1. **Nalawi M.; Baghdadi M.; Alyateem B.; <u>Abo-Hammour Zaer S.</u>; Alsharkawi A.; Design of a Real-time Detection System for Potholes and Bumps Using Deep Learning; *2024 22nd International Conference on Research and Education in Mechatronics (REM)*; Amman, Jordan, 2024, pp. 160-165, Doi: 10.1109/REM63063.2024.10735479.**

2. **Al-Adwan O. H.; Abdellat H. A.; Hussein S.; AlJabbareen O.; <u>Abo-Hammour Z. S.</u>; Alsharkawi A.; In-Class Examinations Proctoring System Using YOLO Architecture; *2024 22nd International Conference on Research and Education in Mechatronics (REM)*; Amman, Jordan, 2024, pp. 154-159, doi: 10.1109/REM63063.2024.10735489.**

3. **<u>Abo-Hammour, Zaer S.</u>; Al Saaideh, Mohammad I.; Alkayyali, Malek; Khasawneh, Hussam J.; Optimal Design of Lead Compensator Using Nature-Inspired Algorithms; 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT); Amman, Jordan, 40-45, 2019.**

4. **Khasawneh, Hussam J.; Abdelaal, Osama; Al Saaideh, Mohammad I.; <u>Abo-Hammour, Zaer S.</u>; Optimal Lead Compensator for Two-Loop Control System of Linear DC Motor; 2019 IEEE Jordan International Joint Conference on Electrical Engineering and Information Technology (JEEIT); Amman, Jordan, 634-639, 2019.**

5. **Alsmadi, Othman M. K.; <u>Abo-Hammour, Zaer. S.</u>; Al-Smadi, Adnan M.; Intelligent Computational Technique with CGA Approach for Optimal Solutions; 2013 IEEE 20th**

International Conference on Electronics, Circuits, and Systems (ICECS); Abu Dhabi, United Arab Emirates, 233-236, DEC 08-11, 2013.

6. Alsmadi, Othman M. K.; <u>Abo-Hammour, Zaer. S.</u>; Al-Smadi, Adnan M.; Artificial neural network for discrete model order reduction with frequency selectivity; 10th International Conference on Fuzzy Logic and Intelligent Technologies in Nuclear Science (FLINS 2012); Istanbul, Turkey, 1011-1016, AUG 26-29, 2012.

7. <u>Abo-Hammour, Zaer. S.</u>; Alsmadi, Othman M. K.; Al-Smadi, Adnan M.; A novel technique for ARMA modelling with order and parameter estimation using genetic algorithms; 2nd International Conference on Networked Digital Technologies (NDT 2010); Book Series: Communications in Computer and Information Science 88; Prague, Czech Republic, 564-576, 2010.

8. Alsmadi, Othman M. K.; <u>Abo-Hammour, Zaer. S.</u>; Al-Smadi, Adnan M.; Efficient substructure preserving MOR using real-time temporal supervised neural network; 2nd International Conference on Networked Digital Technologies (NDT 2010); Book Series: Communications in Computer and Information Science 88; Prague, Czech Republic, 193-202, 2010.

9. Alsmadi, Othman M.K.; <u>Abo-Hammour, Za'er S.</u>; Saraireh, Mohammad S.; Model-order reduction of singularly perturbed systems based on artificial neural estimation and LMI-based transformation; 6th International Conference on Informatics in Control, Automation and Robotics (ICINCO 2009); Volume 1: Intelligent Control Systems and Optimization; Milan, Italy, 173-180, 2009.

10. <u>Abo-Hammour, Za'er S.</u>; Saraireh, Mohammad Suleiman; Alsmadi, Othman M-K.; A comparative study between conventional and continuous genetic algorithms for the solution of Cartesian path generation problems of robot manipulators; 6th International Conference on Informatics in Control, Automation and Robotics (ICINCO 2009); Volume 2: Robotics and Automation; Milan, Italy, 417-424, 2009.

Non-ISI Journal Publications

1. Al-Asasfeh, A.; Hamdan, N.; <u>Abo-Hammour, Z.</u>; Flight control laws verification using continuous genetic algorithms; ISRN Robotics; Volume 2013, Article ID 496457, 2012.

2. Albadarneh, Ramzi B.; Shawagfeh, Nabil T.; <u>Abo-Hammour, Za'er S.</u>; Numerical solution of semi linear Elliptic Equations using 13-points FDM; International Mathematical Forum; 5(11), 527- 536, 2010.

3. Dar-Odeh, Najla S.; Alsmadi, Othman M.; Bakri, Faris; <u>Abu-Hammour, Zaer</u>; Shehabi, Asem A.; Al-Omiri, Mohammed K.; Abu-Hammad, Shatha M. K.; Al-Mashni, Hamzeh; Saeed, Mohammed B.; Muqbil, Wael; Abu-Hammad, Osama A.; Predicting recurrent

aphthous ulceration using genetic algorithms-optimized neural networks; Advances and Applications in Bioinformatics and Chemistry; 2010(3), 7-13, 2010.

4. <u>Abo-Hammour, Za'er S.</u>; Badarneh, R.; General numerical method to approximate the partial derivative based on Lagrange interpolating polynomial; International Journal of Computational Science; 3(3), 299-308, 2009.

Non-ISI Conference Publications

1. <u>Abo-Hammour, Zaer S.</u>; Alkayyali, Malek; Khasawneh, Hussam J.; Al Saaideh, Mohammad I.; On the Design of the Integer and Fractional PID Controllers Using Particle Swarm Optimization; Proceedings of International Conference on Fractional Differentiation and its Applications (ICFDA) 2018; Amman, Jordan, 6 pages, 2018.

2. Abu-Al-Nadi, Dia I.; Alsmadi, Othman M.K.; <u>Abo-Hammour, Zaer S.</u>; Reduced order modeling of linear MIMO systems using particle swarm optimization; The Seventh International Conference on Autonomic and Autonomous Systems (ICAS 2011); Venice, Italy, 62-66, 2011.

3. <u>Abo-Hammour, Zaer S.</u>; Alsmadi, Othman M.K.; Al-Smadi, Adnan M.; Frequency-based model order reduction via genetic algorithm approach; 7th International Workshop on Systems, Signal Processing and Their Applications (WOSSPA 2011); Tipaza, Algeria, 91-94, 2011.

4. Alsmadi, Othman M.K.; <u>Abo-Hammour, Zaer S.</u>; Collision-Avoidance Problem Solution of Robot Manipulators Via CGA; 7th International Conference on Electrical and Electronics Engineering (ELECO 2011); Bursa, Turkey, 2011.

5. Abo-Arqoub, Omar A.; <u>Abo-Hammour, Za'er S.</u>; Application of continuous genetic algorithm for second-order singular boundary value problems; Fifth International Conference on Information Technology (ICIT 2011); Al-Zaytooneh University, Amman, Jordan, 2011.

6. Alsmadi, Othman M.K.; <u>Abo-Hammour, Zaer S.</u>; Abu-Al-Nadi, Dia I.; Algsoon, Alia; A novel genetic algorithm technique for solving university course timetabling problems; 7th International Workshop on Systems, Signal Processing and Their Applications (WOSSPA 2011); Tipaza, Algeria, 195-198, 2011.

7. Abo-Arqoub, Omar A.; <u>Abo-Hammour, Za'er S.</u>; Numerical solution of stiff initial value problems using continuous genetic algorithms; Fourth International Conference on

Information Technology (ICIT 2009); Al-Zaytooneh University, Amman, Jordan, 1-10, 2009.

8. Abu-Arqoub, Omar A.; Shawagfeh, Nabil T.; <u>Abo-Hammour, Za'er S.</u>; Numerical solution of initial value problems using continuous genetic algorithms; Australasian Corrections Education Association (ACEA 2009); Amman, Jordan, 1-5, 2009.

9. <u>Abo-Hammour, Za'er S.</u>; Alsmadi, Othman M.K.; Sarrayreh, Mohammad S.; Khasawneh, Husam J.; Genetic algorithm-based adaptive tuning method of PID controllers. International Symposium on Innovations in Intelligent Systems and Applications (INISTA 2009); Trabzon, Turkey, 527-531, 2009.

10. Alsmadi, Othman M.K.; <u>Abo-Hammour, Za'er S.</u>; Sarrayreh, Mohammad S.; Dimensionality reduction of multi-time scale systems via eigen value decoupling and state transformation; International Symposium on Innovations in Intelligent Systems and Applications (INISTA 2009); Trabzon, Turkey, 522-526, 2009.

11. Abu Arqob, Omar A.; Shawagfeh, Nabil T.; <u>Abo-Hammour, Za'er S.</u>; Numerical solution of fuzzy initial value problems using continuous genetic algorithms; The Second Conference on Mathematical Sciences (CMS 2008); Zarqa Private University, Zarqa, Jordan, 445-456, 2008.

12. Saraireh, Mohammed S.; Saatchi, Reza; AL-Khayatt, samir; Strachan, Rebecca; <u>Abo-Hammour, Za'er</u>; Optimization of IEEE 802.11 MAC protocol parameters using hybrid genetic-fuzzy approach; Proceedings of the IEEE SMC UK-RI 5th Conference on Advances in Cybernetic Systems (AIC 2006); Sheffield, United Kingdom, 253-258, 2006.

Book publications

<u>Abo Hammour, Za'er S.</u>; A Novel Continuous Genetic Algorithms for the Solution of the Cartesian Path Generation Problem of Robot Manipulators; In Robot Manipulators: New Research, Edited by Lui JX; Nova Publishers; 133-190, 2005.

Main taught courses

Course name	*Number of semesters*	*Institution*	*Country*	*Academic Years*
Automatic Control Systems[8]	>30	**Univ. of Jordan**	**Jordan**	2005-2022
Numerical Methods for Engineers[8]	>30	**Univ. of Jordan**	**Jordan**	2005-2022
Modern Control Systems[8]	>15	**Univ. of Jordan**	**Jordan**	2016-2022
Modeling and Simulation[8]	>15	**Univ. of Jordan**	**Jordan**	2010-2017

Robotic Manipulators[8]	>25	Univ. of Jordan	Jordan	2005-2018

[8]   **Self-prepared professional handouts are used for teaching the above courses.**

Additional past activities

- ❖ **Participation in and leading a large number of committees at the national and the university levels in the field of scientific research, innovation, accreditation and quality assurance, outreach with industries, course plans, faculty members promotions, and investigation with students and faculty members.**

- ❖ **Recommendation of a group of novel proposals at the national level that are approved and applied from the concerned Jordanian governmental authorities.**

- ❖ **Supervision of a large number of master's degree students at the national and the university levels.**

- ❖ **Review of a large number of journals manuscripts in the field of computational intelligence and optimization, data and numerical analysis, artificial intelligence, systems identification and prediction, modeling and simulation, robotics, and control systems.**

References

To be provided upon request.