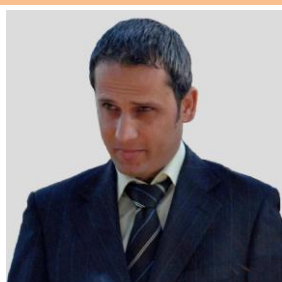


Dr. Omar Abed Elkareem Abu Arqub

Detailed Curriculum Vitae

Last Updated on Thursday, Oct 15, 2014
By Dr. Omar Abu Arqub
Al Balqa Applied University, Jordan

Contact Information



*This CV can be found
through the link:*

[https://sites.google.com/site/
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Campus Address

Dr. Omar Abu Arqub
Associate Professor of Applied Mathematics
Department of Mathematics, Faculty of Science
Al-Balqa Applied University, Salt Campus
Salt, Jordan

Mailing Address

Dr. Omar Abu Arqub
P. O. Box: Salt 19117, Jordan

Websites

- **Personal and Courses Website:** <https://sites.google.com/site/dromarabuarqub/>
- **Guidance Website:** <https://sites.google.com/site/mathematicsbau/>
- **Citations Website:** <http://scholar.google.com/citations?user=T4qYuBMAAAAJ>

Personal Data

- | | | | |
|-------------------------|--------------------------------|-----------------------------|------------|
| • Place of Birth | Ma'daba, Jordan | • Nationality | Jordanian |
| • Date of Birth | 29 th December 1973 | • Nationality Number | 9731002090 |
| • Marital Status | Married | • Gender | Male |

Qualifications

- PhD in Applied Mathematics, University of Jordan, Jordan
- MSc in Applied Mathematics, University of Jordan, Jordan
- BSc in Mathematics, Mutah University, Jordan



Academic Preparation

- **September 2003 to May 2008** PhD Student
Thesis Title: Numerical Solution of Fuzzy Differential Equations
Area of Study: Applied Mathematics
- **September 1999 to January 2002** MSc Student
Thesis Title: Some Solutions of a Class of Partial Differential Equations with Variable Coefficients and Related Principles
Area of Study: Applied Mathematics
- **October 1992 to June 1996** BSc Student
Project Title: Solving Ordinary Differential Equations using Perturbation Technique
Area of Study: Mathematics

Work Experience

- **September 2013 at Present** Associate Professor of Applied Mathematics, Department of Mathematics, Faculty of Science, Al-Balqa Applied University, Jordan
- **January 2008 to September 2013** Assistance Professor of Applied Mathematics, Department of Mathematics, Faculty of Science, Al-Balqa Applied University, Jordan
- **September 2005 to August 2008** Teaching Assistance, Department of Mathematics, Faculty of Science, University of Jordan, Jordan
- **September 2003 to August 2005** Assistantship, Department of Mathematics, Faculty of Science, University of Jordan, Jordan
- **September 1996 to August 1999** Mathematics Teacher, Ministry of Education, Amman, Jordan

Membership in Professional Organizations

- Mathematical Optimization Society (MOS): Since 2014
- International Rough Set Society (IRSS): Since 2011
- Iranian Fuzzy Systems Society (IFSS): Since 2011
- Jordan Research Group in Applied Mathematics (JRGAM): Since 2012
- Member of the Jordanian Mathematics Society (JMS): Since 2012
- International Association of Computer Science and Information Technology (IACSIT): Since 2011
A member of the following IACSIT societies:
 1. IACSIT Applied Mathematics Society (AMS)
 2. IACSIT Applied Physics Society (APS)
 3. IACSIT Computer Theory and Engineering Society (CTES)
- International Association of Engineers and Scientists (IAEST): Since 2013

- International Association of Engineers (IAENG): Since 2013
A member of the following IAENG societies:
 1. IAENG Society of Scientific Computing (ISSC)
 2. IAENG Society of Artificial Intelligence (ISAI)

P u b l i c a t i o n s

- *Omar Abu Arqub*, Ahmad El-Ajou, Shaher Momani, Nabil Shawagfeh, Analytical solutions of fuzzy initial value problems by HAM, *Applied Mathematics & Information Sciences*, 2013
- *Omar Abu Arqub*, Zaer Abo-Hammour, Shaher Momani, Application of continuous genetic algorithm for nonlinear system of second-order boundary value problems, *Applied Mathematics & Information Sciences*, 2014
- *Omar Abu Arqub*, Mohammed Al-Smadi, Nabil Shawagfeh, Solving Fredholm integro-differential equations using reproducing kernel Hilbert space method, *Applied Mathematics and Computation*, 2013
- Mohammed Al-Smadi, *Omar Abu Arqub*, Shaher Momani, A computational method for two-point boundary value problems of fourth-order mixed integrodifferential equations, *Mathematical Problems in Engineering*, 2013
- Ahmad El-Ajou, *Omar Abu Arqub*, Shaher Momani, Solving fractional two-point boundary value problems using continuous analytic method, *Ain Shams Engineering Journal (Engineering, Physics, and Mathematics)*, 2013
- *Omar Abu Arqub*, Series solution of fuzzy differential equations under strongly generalized differentiability, *Journal of Advanced Research in Applied Mathematics*, 2013
- *Omar Abu Arqub*, Ahmad El-Ajou, Solution of the fractional epidemic model by homotopy analysis method, *Journal of King Saud University (Science)*, 2013
- *Omar Abu Arqub*, Mohammed Al-Smadi, Shaher Momani, Application of reproducing kernel method for solving nonlinear Fredholm-Volterra integrodifferential equations, *Abstract and Applied Analysis*, 2012
- Ahmad El-Ajou, *Omar Abu Arqub*, Shaher Momani, Homotopy analysis method for second-order boundary value problems of integrodifferential equations, *Discrete Dynamics in Nature and Society*, 2012
- *Omar Abu Arqub*, Zaer Abo-Hammour, Shaher Momani, Nabil Shawagfeh, Solving singular two-point boundary value problems using continuous genetic algorithm, *Abstract and Applied Analysis*, 2012
- Mohammed Al-Smadi, *Omar Abu Arqub*, Nabil Shawagfeh, Approximate solution of BVPs for 4th-order IDEs by using RKHS method, *Applied Mathematical Sciences*, 2012
- *Omar Abu Arqub*, Zaer Abo-Hammour, Numerical solution of systems of second-order boundary value problems using continuous genetic algorithm, *Information Sciences*, 2014
- Mohammed Al-Smadi, *Omar Abu Arqub*, Ahmad El-Ajou, A Numerical Iterative Method for Solving Systems of First-Order Periodic Boundary Value Problems, *Journal of Applied Mathematics*, 2014
- *Omar Abu Arqub*, Ahmad El-Ajou, Zeyad Al Zhour, Shaher Momani, Multiple Solutions of Nonlinear Boundary Value Problems of Fractional Order: A New Analytic Iterative Technique, *Entropy* 16, 2014
- Zaer Abo-Hammour, Othman Alsmadi, Shaher Momani, *Omar Abu Arqub*, A Genetic Algorithm Approach for Prediction of Linear Dynamical Systems, *Mathematical Problems in Engineering*, 2013
- Ahmad El-Ajou, *Omar Abu Arqub*, Zeyad Al Zhour, Shaher Momani, New Results on Fractional Power Series: Theories and Applications, *Entropy* 16, 2013
- *Omar Abu Arqub*, Zaer Abo-Hammour, Ramzi Al-Badarneh, Shaher Momani, A reliable analytical method for solving higher-order initial value problems, *Discrete Dynamics in Nature and Society* 2013
- *Omar Abu Arqub*, Ahmad El-Ajou, Ahmad Bataineh, Ishaq Hashim, A representation of the exact solution of generalized Lane–Emden equations using a new analytical method, *Abstract and Applied Analysis*, 2013
- Zaer Abo-Hammour, *Omar Abu Arqub*, Shaher Momani, Nabil Shawagfeh, Optimization solution of Troesch's and Bratu's problems of ordinary type using novel continuous genetic algorithm, *Discrete Dynamics in Nature and Society* 2013
- Nabil Shawagfeh, *Omar Abu Arqub*, Shaher Momani, Analytical solution of nonlinear second-order periodic boundary value problem using reproducing kernel method, *Journal of Computational Analysis and Applications*, 2013
- Shaher Momani, *Omar Abu Arqub*, Tasawar Hayat, Hamed Al-Sulami, A computational method for solving

periodic boundary value problems for integro-differential equations of Fredholm-Volterra type, Applied Mathematics and Computation, 2014

- *Omar Abu Arqub*, Mohammed Al-Smadi, Numerical algorithm for solving two-point, second-order periodic boundary value problems for mixed integro-differential equations, Applied Mathematics and Computation, 2014
- *Omar Abu Arqub*, Shaher Momani, Mamoun Abu Hammad, Shaher Momani, A residual power series technique for solving systems of initial value problems, Applied Mathematics & Information Sciences, 2014
- *Omar Abu Arqub*, An iterative method for solving fourth-order boundary value problems of mixed type integro-differential equations, Journal of Computational Analysis and Applications, 2014
- Ahmad El-Ajou, *Omar Abu Arqub*, Shaher Momani, Approximate analytical solution of the nonlinear fractional KdV-Burgers equation: a new iterative algorithm, Journal of Computational Physics, 2014
- *Omar Abu Arqub*, Ahmad El-Ajou, Shaher Momani, Construct and predict solitary pattern solutions for nonlinear time-fractional dispersive partial differential equations, Journal of Computational Physics, 2014
- Shaher Momani, *Omar Abu Arqub*, Saleh Al-Mezel, Marwan Kutbi, Ahmed Alsaedi, Existence and uniqueness of fuzzy solution for the nonlinear second-order fuzzy Volterra integrodifferential equations, Discrete Dynamics in Nature and Society 2013
- Banan Maayah, Samia Bushnaq, Shaher Momani, *Omar Abu Arqub*, Iterative multistep reproducing kernel Hilbert space method for solving strongly nonlinear oscillators, Advances in Mathematical Physics, 2014
- *Omar Abu Arqub*, Shaher Momani, Saleh Al-Mezel, Marwan Kutbi, Existence, uniqueness, and characterization theorems for fuzzy integrodifferential equations of Volterra type, Mathematical Problems in Engineering, 2014
- Ahmad El-Ajou, *Omar Abu Arqub*, Mohammed Al-Smadi, A general form of the generalized Taylor's formula with some applications, Applied Mathematics and Computation, 2014
- Mohammed Al-Smadi, Asad Freihat, *Omar Abu Arqub*, Nabil Shawagfeh, A Novel Multistep Generalized Differential Transform Method for Solving Fractional-order Lü Chaotic and Hyperchaotic Systems, Journal of Computational Analysis and Applications, 2014
- Iryna Komashynska, Mohammed Al-Smadi, *Omar Abu Arqub*, Shaher Momani, An Efficient Analytical Method for Solving Singular Initial Value Problems of Nonlinear Systems, Applied Mathematics & Information Sciences, 2014
- *Omar Abu Arqub*, Shaher Momani, Saleh Al-Mezel, Marwan Kutbi, A novel iterative numerical algorithm for the solutions of systems of fuzzy initial value problems, Applied Mathematics & Information Sciences, 2014

Scientific Literature

- *Omar Abu Arqub*, Programing using Mathcad for Scientists and Engineering, 2012
- *Omar Abu Arqub*, Handbook of Mathematical Laws, 2013

Conferences and Workshops

- **August 19 to 21, 2014** *Omar Abu Arqub*, A novel iterative reproducing kernel Method for solving first-order, two-point fuzzy periodic boundary value problems, Advances in Applied Mathematics and Mathematical Physics (ICAAMMP), Istanbul, Turkey
- **May 18 to 21, 2014** *Omar Abu Arqub*, An iterative reproducing kernel algorithm for solving systems of fuzzy algebraic equations, The 8th International Conference on Thermal Engineering (ICTEA), Amman, Jordan

- **April 25 to 26, 2013** *Omar Abu Arqub*, Solution of the Lane-Emden equation by residual power series method, Sixth international conference on information technology (ICC2013), Al-Zaytoonah University of Jordan, Jordan
- **April 27 to 28, 2011** *Omar Abu Arqub*, Zaer Abo-Hammour, A continuous genetic algorithm approach for implicit two-point boundary value problems, Third conference of mathematical science (CMS'2011), Zarqa University, Jordan
- **June 3 to 5, 2009** *Omar Abu Arqub*, Zaer Abo-Hammour, Numerical solution of stiff initial value problems using continuous genetic algorithm, Fourth international conference on information technology (ICIT2009), Al-Zaytoonah University of Jordan, Jordan
- **July 23 to 24, 2008** *Omar Abu Arqub*, Zaer Abo-Hammour, Numerical solution of initial value problems using continuous genetic algorithm, Fourth international workshop on advanced computation for engineering applications (ACEA2008), Al-Balqa Applied University, Jordan

Computer Skills

- **Mathematics Packages** Mathematica, Mathcad, Maple, Matlap
- **General Computer Skills** ICDL, Latex

Thesis and Project Supervised

- I co-supervised on two PhD thesis in mathematics in the university of Jordan, Jordan
- I co-supervised on two Msc thesis in mathematics in Al al-Bayt university and the university of Jordan, Jordan
- I co-supervised on two Mcs thesis in computer sciences in Al-balqa applied university, Jordan
- I supervised on three BSc graduation project in mathematics in Al-Balqa applied university, Jordan

Research Interest

My research interests focus on the following subjects:

- Computational Optimization
- Numerical Analysis
- Fuzzy Calculus Theory
- Fractional Calculus Theory
- Stochastic Calculus Theory
- Optimal Control Theory
- Image Processing

Refereing Activities

A member of scientific committee and editorial review board on:

- Information Sciences (INS) (Elsevier): USA
- Applied Mathematics and Computation (AMC) (Elsevier): USA
- International Journal of Nonlinear Mechanics (IJNM) (Elsevier): USA
- Journal of Computational physics (JCOMP) (Elsevier): Switzerland
- Computer & Mathematics with Applications (camwa) (Elsevier): USA
- Journal of King Saud University – Science (JKSUS) (Elsevier): Sudia Arabia
- Mathematical Sciences (MS) (Springer): Iran
- Applied Mathematics & Information Sciences (AMIS) (Natural Sciences): USA
- Abstract and Applied Analysis (AAA) (Hindawi): USA
- Journal of Functional Spaces (JFS) (Hindawi): USA

Omar Abu Arqub Curriculum Vitae

- Journal of Applied Mathematics (JAM) (Hindawi): USA
- Journal of Numerical Analysis (JNA) (Hindawi): USA
- Mathematical Problems in Engineering (MPE) (Hindawi): USA
- Annals of Fuzzy Mathematics and Informatics (AFMI) (Kyung Moon Sa): South Korea
- Journal of Advanced Research in Differential Equations (JARDE): USA
- International Journal of Computing and Information Sciences (IJCIS): Canada
- Journal of Advanced Research in Applied Mathematics (JARAM): USA
- Journal of Control Engineering and Technology (IJCET): USA
- Journal of Advanced Research in Pure Mathematics (JARPM): USA
- International Journals of Engineering & Sciences (IJENS): Pakistan
- Journal of Advanced Research in Dynamical and Control Systems (JARDCS): USA
- World Academy of Science, Engineering, and Technology (Engineering and Physical Sciences): Malaysia
- Journal of Advanced Research in Computer Science (JARCS): USA
- Journal of Chemical and Petroleum Engineering (JChPE): Iran
- International Journal of Uncertainty, Fuzziness and Knowledge-Based Systems (IJUFKBS): USA

Editorial Activities

A member of editorial board on the following journals:

- International Journal of Applied Mathematics and Modeling
- Journal of Advances in Mathematics
- Applied Mathematics & Information Sciences

Lead of guest editors of the following special issues:

- "*Fuzzy calculus theory and its applications*" in the journal of "*Discrete Dynamics in Nature and Society*"
- "*Computational Optimization*" in the journal of "*Applied and Computational Mathematics*"

Professional and Academic Activities

- Member of mathematics curriculum plan for the master degree in the department of mathematics in Al-Balqa applied university, Jordan
- Member of development and planning committee in the faculty of science at Al-Balqa applied university, Jordan
- Member of curriculum committee in faculty of science at Al-Balqa applied university, Jordan
- Member of college board in faculty of science at Al-Balqa applied university, Jordan
- Member of several internal committees in the faculty and department at Al-Balqa applied university, Jordan
- Member of academic advising for students in the department of mathematics in Al-Balqa applied university, Jordan
- Member of the library and textbooks committee

Develop of New Course

- I construct and developed the contents and teaching methods of the course *Fuzzy Calculus and its Applications* in the BSc plan of mathematics in Al-Balqa applied university, Jordan

Record of Undergraduate Courses

I taught the following undergraduate courses:

- **Calculus:** Mathematics for Business Administration, Pre-Calculus, Calculus I, Calculus II, Advanced Calculus, Fuzzy Calculus and its Applications
- **Algebra:** Abstract Algebra 1, Linear Algebra I, Linear Algebra II, Lineare Algebra and Numerical Analysis
- **Differential Equations:** Ordinary Differential Equations I, Partial Differential Equations I

- **Engineering Mathematics:** Engineering Mathematics I, Engineering Mathematics 2
- **Analysis:** Numerical Analysis I, Numerical Solutions of Differential Equations, Intermediate Analysis, Complex Analysis
- **Mathematical Programming Packages:** Mathematica, Mathcad, Maple
- **Special Topics in Applied Mathematics:** Matrix Analysis and Theory of Inequalities, Fuzzy Calculus Theory and its Applications, Fractional Calculus Theory and its Applications
- **Statistics:** Principles of Statistics, Probability and Statistics
- **Discrete Mathematics**
- **Number Theory**
- **Integral Transforms and Integral Equations**
- **Methods of Applied Mathematics**
- **Computations in Applied Mathematics**
- **Mathematical Modeling**
- **Special Functions and Fourier Analysis**
- **Modern Euclidean Geometry**
- **Foundations of Mathematics**
- **Mathematical Physics I**

L a n g u a g e s

- **Arabic** Mother Tongue
- **Italian** Very Good
- **English** Excellent

I n t e r e s t a n d H o b b i e s

- Teamwork, Enterprises, Leadership, and Organization
- Internet surfing and reading

C o n t a c t s

- **Professor of Applied Mathematics** Tasawar Hayat
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- **Professor of Numerical Analysis** Ishaq Hashim
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Universiti Kebangsaan Malaysia, Malaysia
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- **Professor of Functional Analysis** Abdul-Majid Wazwaz
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Saint Xavier University, USA
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- **Professor of Optimization** Ali Yildiz
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Bursa Technical University, Turkey
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- **Professor of Applied Physics** Jamil Khalifeh
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University of Jordan, Jordan
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