

CURRICULUM VITAE

PERSONAL DATA

Full Name	Mohammad Ahmad Salem Al-Zuriqat
Data of Birth	August, 27, 1973
Place of Birth	Jeddah, Saudia Arabia
Nationality	Jordanian
Marital Status	Married, one daughter and three sons

PERMANENT ADDRESS

Address	Jordan-Jerash
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ACADEMIC QUALIFICATION

Ph.D	In Mathematics, Applied Mathematics (Systems of Ordinary Differential Equations of Fractional Order)
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University	University of Jordan, Jordan, 2009.
Title Thesis	(An Efficient Numerical Method for Solving Systems of Ordinary Differential Equations of Fractional Order). with “Excellent ” merit and 3.85 grade

Supervisor	Professor Ahmad D. Alawneh
Co-supervisor	Professor Shaher M. Momani

B.Sc.	In Mathematics, Applied Mathematics.
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University	University of Jordan, Jordan, 1998.
Supervisor	Professor Ahmad D. Alawneh

EXPERIENCES

- 1 December, 2019, professor, Department of Mathematics, Al Al-Bayt University, Jordan.
- 2 November, 2014-2019, Associate Prof., Department of Mathematics, Al Al-Bayt University, Jordan.
- 3 October, 2010-2014, Assistant Prof., Department of Mathematics, Al Al-Bayt University, Jordan.
- 4 Sep, 2009-2010, Lecturer, Department of Mathematics, Al Al-Bayt University, Jordan.
- 5 Summer 2009, Part-time Lecturer, Department of Mathematics, University of Science and Technology, Jordan.
- 6 August 2007-December 2008, Teaching assistant, Department of Mathematics, The University of Jordan, Jordan.
- 7 2003-2007, Teacher at Ministry of Education, Jordan.
- 8 1999- 2003, Teacher at the Ministry of Education, U.A.E

TEACHING RECORD

1. Calculus I
2. Calculus II
3. Calculus III
4. Ordinary Differential Equations I
5. Ordinary Differential Equations II
6. Mathematical methods
7. Partial differential equation
8. Numerical Analysis I
9. Numerical Analysis II
10. Advanced Mathematical methods
11. Special functions and Fourier analysis

RESEARCH INTERESTS

My general research interests are in the areas of applied mathematics, differential equations of applied mathematics, fractional calculus and fractional differential equations.

More specifically, my research interests can be summarized as follows:

1. Numerical solution of ordinary and partial differential equations of fractional order.
2. Numerical solution of ordinary and partial differential equations of fractional order (homotopy analysis method, Adomian decomposition method, generalized differential transform method, laplace Adomian method, multi-step method, Runge-Kutta method and others).
3. Theory of fractional differential equations and integral equations.
4. Stability of fractional linear systems.
5. Mathematical Modelling.
6. Mathematical Physics.
7. Nonlinear Dynamics.

PUBLISHED AND ACCEPTED PAPERS

1. Mohammad Zurigat, Shaher Momani and Ahmad Alawneh, Homotopy analysis method for systems of fractional integro-differential equations, Proceeding of The Fourth International Workshop of Advanced Computation for Engineering Applications, Jordan, (2008) 106-111.
2. Mohammad Zurigat, Shaher Momani, Zaid Odibat and Ahmad Alawneh, The homotopy analysis method for handling systems of fractional differential equations. Applied Mathematical Modelling, 34 (1) (2010) 24-35.
3. Mohammad Zurigat, Shaher Momani and Ahmad Alawneh, Analytical approximate solutions of systems of fractional algebraic-differential equations by homotopy analysis method, Computers and Mathematics with Applications, 59 (3) (2010) 1227-1235.
4. Mohammad Zurigat, Analytical approximate solutions of fractional differential equations by Laplace Adomian decomposition method, Analele Universitatii Oradea Fasc. Matematica, Tom XVI, (2) (2010), 173-184.

5. Mohammad Zurigat, Solving Fractional Oscillators Using Laplace Homotopy Analysis Method, *Annals of the University of Craiova, Mathematics and Computer Science Series*, 38 (4) (2011), 1-11.
6. Mohammad Zurigat, Shaher Momani and Ahmad Alawneh, Solving nonlinear oscillators using a modified homotopy analysis method, *Stud. Univ. Babeş-Bolyai Math.* 57 (2012) 579–588.
7. Mohammad Zurigat, Solving nonlinear fractional differential equation using a multi-step Laplace Adomian decomposition method, *Annals of the University of Craiova, Mathematics and Computer Science Series*, 39 (2) (2012), 162-172.
8. Mohammad Zurigat, The multi-step analytic method and application for approximating a giving up fractional smoking model, *Analele Universitatii Oradea Fasc. Matematica*, Tom XX, (1) (2013), 177-188.
9. Mohammad Zurigat, Safwan Al-Shara, Shaher Momani and Ahmad Alawneh, The multi-step homotopy analysis method: A powerful scheme for handling non-linear oscillators, *Iranian Journal of Science and Technology*, 37 (2013), 421-429.
10. Mohammad Zurigat, Shaher Momani and Ahmad Alawneh, The multistage homotopy analysis method: Application to a biochemical reaction model of fractional order, *International Journal of Computer Mathematics*, 91 (5) (2014), 1030-1040.
11. Hassan Al-Zou'bi and Mohammad Zurigat, Solving nonlinear fractional differential equations using multi-step homotopy analysis method, *Annals of the University of Craiova, Mathematics and Computer Science Series*, 41 (2) (2014), 190-199.
12. H. M. Jaradat, M. Zurigat, Safwan Al-shara and Qutaibeh Katatbeh, Toward a new algorithm for systems of fractional algebraic-differential equations, *Italian Journal of Pure and Applied Mathematics*, 32 (2014), 579-594.
13. Mohammad Zurigat, Asad A. Freihat and Ali H. Handam, The multi-step homotopy analysis method for solving the Jaulent-Miodek equations, *Proyecciones Journal of*

Mathematics, 34 (1) (2015), 45-54.

14. Mohammad Zurigat, Application of the multi-step homotopy analysis method to solve nonlinear differential algebraic equations, *Stud. Univ. Babeş-Bolyai Math.*, 60 (1) (2015), 3-12.
15. Mohammad Zurigat and Mousa Ababneh, Application of the multi-step differential transform method to solve a fractional human T-cell lymphotropic virus I (HTLV-I) infection of CD4+ T-cells, *Journal of Mathematics and Applications*, 38 (2015), 163-172.
16. Ali H. Handam, Asad A. Freihat and Mohammad Zurigat, The multi-step homotopy analysis method for solving fractional-order model for HIV infection of CD4+ T cells, *Proyecciones Journal of Mathematics*, 34 (4) (2015), 307-322.
17. Asad A. Freihat, M. Zurigat and Ali H. Handam, The multi-step homotopy analysis method For Modified Epidemiological Model for Computer Viruses, *Afrika Matematika*, 26 (3) (2015), 585-596.
18. Ramzi B. Albadarneh, Iqbal M. Batiha and Mohammad Zurigat, Numerical solutions for linear fractional differential equations of order $1 < \alpha < 2$ using finite difference method (FFDM), *J. Math. Computer Sci.* 16 (2016), 103-111.
19. Ramzi B. Albadarneh, Mohammad Zurigat and Iqbal M. Batiha, Numerical solutions for linear and non-linear fractional differential equations, *International Journal of Pure and Applied Mathematics*, 106 (3) (2016), 859-871.
20. M. Zuriqat, The homo separation analysis method for solving the partial differential equation, *Italian Journal of Pure and Applied Mathematics*, 40 (2018), 535-543.
21. A. A. Freihat and M. Zuriqat, Analytical Solution of Fractional Burgers–Huxley Equations via Residual Power Series Method, *Lobachevskii Journal of Mathematics*, 40 (2) (2019), 174-182.
22. M. Zuriqat, Exact solution for the fractional partial differential equation by homo separation analysis method, *Afrika Matematika*, 30 (7-8) (2019), 1133-1143.

23. M. Zuriqat and A. A. Freihat, The multi-step Adomian decomposition method for approximating a fractional smoking habit model, *Kyungpook Mathematical Journal.*, (accepted).

RESEARCH SUPERVISION (MSC STUDENTS)

1. Hassan Al-Zoubi, A Powerful Scheme For Handling Nonlinear Fractional Differential Equations Using Multi-Step Homotopy Analysis Method, Al Al-Bayt University, Jordan, (2012).
2. Iqbal Batiha, Numerical Solution For Fractional Differential Equation Using Finite Difference Method, Al Al-Bayt University, Jordan, (2013).
3. Asmaa Zioud, The Multi-Step Homotopy Analysis Method for Handling Systems of Fractional Integral Differential Equations, Al Al-Bayt University, Jordan, (2013).
4. Rawan Bader, Analytical approximate solutions of systems of fractional algebraic differential equations by The Multi-Step homotopy analysis method, Al Al-Bayt University, Jordan, (2013).
5. Sana'a Awwad, Solving fractional oscillator problems using a modified differential transform method, Al Al-Bayt University, Jordan, (2014).
6. Maha Al-Harashseh, Analytical solution of system of fractional differential equation using a modified differential transforms method, Al Al-Bayt University, Jordan, (2015).
7. Lina Abualhija, Solving Linear and Nonlinear Fractional Differential Equations Using Laplace Homotopy Analysis Method, Al Al-Bayt University, Jordan, (2016).
8. Abdel-Salam Alasem, The Laplace Homotopy Analysis Method for Solving Systems of Fractional Integral Differential Equations, Al Al-Bayt University,

Jordan, (2016).

9. Ruba Khalil Shatnawi, Numerical solutions of classical obstacle problem using reproducing kernel method, Al Al-Bayt University, Jordan, (2018).
10. Remah Zuhair Al Khaza'leh, Adaptation of reproducing kernel method to singular boundary value problems involving Fredholm-Volterra operators, Al Al-Bayt University, Jordan, (2018).
11. Mohammed Khaled Al-Jazazi, Application of reduced differential transform method for solving a class of PDEs, Jordan, (2019).
12. Eman Abdullah Al-Shdifat, Exact solutions for the fractional partial differential equation by homotopy separation method, Jordan, (2019).
13. Israa Jihad Nasrallah, Exact solutions of fractional partial differential equations by Laplace homo separation method, Jordan, (2019).
14. Maha Zaha Al-Mahawesh, Application of Residual Power Series Method for solving a system of fractional differential equations, Jordan, (2019).

I have been involved in discussions committees theses as follows:

1. Hana' Srour Abdel-salam, Solution of optimization problems via he's variational iteration method (VIM), University of Science and Technology, Jordan, (2011).
2. Reema Kiwan, An analytical scheme for two point boundary value problem using modified homotopy analysis method, Al Al-Bayt University, Jordan, (2012).

CERTIFICATES

- Cognitive Research Trust (CORT).
- Preparing procedural Researches.
- Psyhaitric healthy for students.
- Certificate of Creative Teaching.
- Teaching the skills of Teaching at school Curriulum.

LANGUAGES

Arabic Native Speakers
English Reading - Writing and Speaking (Very good)

REFERENCES

Professor Ahmad Alawaneh Department of Mathematics, University of Jordan, Jordan

Professor Shaher Momani Department of Mathematics, University of Jordan, Jordan,
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Professor Zaid Odibat Department of Mathematics, Al-Balqa Applied University,
Jordan, E-mail odibat@bau.edu.jo
