Omid Baghani

Curriculum Vitae

"Logic will get you from A to Z; imagination will get you everywhere"

Albert Einstein

Personal Information

Date of birth: July 29, 1982

Place of birth: Sabzevar, Iran

Current Position

2014-Present **Faculty Member**, Hakim Sabzevari University, Faculty of Mathematics and Computer Science.

Education

2009-2013 **Ph.D.**, Department of Mathematics, Ferdowsi University of Mashhad, Mashhad, Iran.
- Title of Thesis: *Application of fixed point theorems in error analysis for approximating solutions of Volterra integral equations*
- Supervisor*:* Dr. Mortaza Gachpazan

2006-2008 **M.Sc.**, Department of Applied Mathematics, Hakim Sabzevari University, Sabzevar, Iran.
- Title of Thesis: *Estimation of attraction region and its fuzzy analysis*
- Supervisor: Prof. Sohrab Effati

2001-2005 **B.Sc.**, Department of Mathematics, Payam Noor University of Sabzevar, Sabzevar, Iran.

Areas of Expertise

- Numerical Methods
- Error Estimation
- Optimal Control
- Network Flows
- Fixed Point Theory
- Multi-objective Programming

Academic Positions

2014-2021 **Assistant Professor**, Hakim Sabzevari University, Sabzevar, Iran.

2021-Present **Associate Professor**, Hakim Sabzevari University, Sabzevar, Iran.

Hakim Sabzevari University, Sabzevar, Iran

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Honors

2017 **Awarded** at "Razavi" National Calligraphy Festival, Birjand, Iran.
2013 **Selected** in "Tolo Aftab" National Calligraphy Festival, Varamin, Iran.
2008 **First person** in Entrance Examination of Ph.D. degree, Ferdowsi University of Mashhad, Iran.
2007 **First person** of "Ghorban to Ghadir" National Calligraphy Festival, Zahedan, Iran.
2007 **Second person** of "Ab" Provincial Calligraphy Festival, Sabzevar, Iran.

Teaching Experiences

- Calculus I, II
- Engineering Mathematics
- Approximation Theory
- Optimal Control and Variational calculus
- Numerical Analysis
- Advanced Nonlinear Programming
- Advanced Linear Programming
- Advanced Operations Research

Technical Reviewer

- Applied Mathematics and Computation (AMC). *https://www.journals.elsevier.com/applied-mathematics-and-computation*
- Journal of Integral Equations and Applications. *https://rmmc.asu.edu/jie/jie.html*
- Nonlinear Analysis: Modelling and Control. *https://www.journals.vu.lt/nonlinear-analysis*
- Iranian Journal of Numerical Analysis and Optimization (IJNAO). *http://www.jm.um.ac.ir/*
- Sahand Communications in Mathematical Analysis (SCMA) *http://www.scma.maragheh.ac.ir/*
- Annals of Fuzzy Mathematics and Informatics (AFMI). *http://www.afmi.or.kr/*
- Journal of Mathematics and Computer Science (JMCS). *https://www.isr-publications.com/jmcs*
- Computational Methods for Differential Equations (CMDE). *https://cmde.tabrizu.ac.ir/*
- Chaos, Solitons & Fractals. *https://www.journals.elsevier.com/chaos-solitons-and-fractals*
- Journal of Fixed Point Theory and Applications (JFPT). *https://www.springer.com/journal/1178*

Journal Papers

2023

H. Azin, A. Habibirad, O. Baghani, *Legendre-finite difference method for solving fractional nonlinear Sobolev equation with Caputo derivative*, Journal of Computational Science 74, 102177.

H Azin, M H Heydari, O Baghani, F Mohammadi, *Fractional Vieta-Fibonacci wavelets: application for systems of fractional delay differential equations method for solving a wide class of nonlinear fractional optimal control problems with Caputo derivatives*, Physica Scripta 98 (2023) 095242.

2022

M. Erfanian, H. Zeidabadi, O. Baghani, *Solving an inverse problem for a time-fractional advection-diffusion equation with variable coefficients by rationalized Haar wavelet method*, Journal of Computational Science 64, 101869.

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O. Baghani, *SCW-iterative-computational method for solving a wide class of nonlinear fractional optimal control problems with Caputo derivatives*, Mathematics and Computers in Simulation 202, 540-558.

2021

O. Baghani, *Second Chebyshev wavelets (SCWs) method for solving finite-time fractional linear quadratic optimal control problems*, Mathematics and Computers in Simulation 190, 343-361.

O. Baghani, S. M. S. N. Sales, *Existence, uniqueness, and relaxation results in initial value type problems for nonlinear fractional differential equations*, Analysis and Mathematical Physics 11, 1-19.

S. S. Harikrishnan, **O. Baghani**, K. Kanagarajan, *Qualitative analysis of fractional differential equations with φ-Hilfer fractional derivative, Computational Methods for Differential Equations*, 10.22034/CMDE.2020.37370.1670.

2020

O. Baghani, *The rate of convergence of an iterative-computational algorithm for second-kind nonlinear Volterra integral equations with weakly singular kernels*, Mathematical Methods in the Applied Sciences 2020;1–17.

D. Vivek, **O. Baghani**, K. Kanagarajan, *Existence results for hybrid fractional differential equations with Hilfer fractional derivative*, Caspian Journal of Mathematical Sciences (CJMS) 9 (2), 294-304.

O. Baghani, S. Ghafoori, *Solving bi-objective network flow problem associated with minimum cost-time loading*, Iranian Journal of Numerical Analysis and Optimization 10 (2), 33-48.

K Aliabadi, **O Baghani**, *Extraction of vegetation from Landsat satellite images using rationalized Haar wavelet algorithm*, Iranian Journal of Remote Sensing & GIS 12 (2), 45-56.

2019

O. Baghani, *Solving state feedback control of fractional linear quadratic regulator systems using triangular functions*, Communications in Nonlinear Science and Numerical Simulation 73, 319-337.

D. Vivek, **O. Baghani**, K. Kanagarajan, *Theory of Hybrid Fractional Differential Equations with Complex Order*, Sahand Communications in Mathematical Analysis 15, 65-76.

O. Baghani, *A correction to "Rationalized Haar wavelet bases to approximate solution of nonlinear Fredholm integral equations with error analysis [Applied Mathematics and Computation 265 (2015) 304–312]*, Applied Mathematics and Computation 352, 249-257.

2018

S. M. S. Nabavi, **O. Baghani**, *On multi-singular integral equations involving n weakly singular kernels*, Filomat 32 (4), 1323-1333.

2017

O. Baghani, *On fractional Langevin equation involving two fractional orders*, Communications in Nonlinear Science and Numerical Simulation 42, 675-681.

O. Baghani, H. Baghani, *A new contraction condition and its application to weakly singular Volterra integral equations of the second kind*, Journal of Fixed Point Theory and Applications 19, 2601-2615.

2014

M. Gachpazan, **O. Baghani**, *A stopping rule for an iterative algorithm in systems of integral equations*, Computational and Applied Mathematics 33, 325-332.

2012

O. Baghani, M. Gachpazan, H. Baghani, *Existence, uniqueness and stability of solutions for a class of nonlinear integral equations under generalized Lipschitz condition*, Indian Journal of Pure and Applied Mathematics 43 (4), 309-321.

2011

M. E. Gordji, H. Baghani, **O. Baghani**, *On existence and uniqueness of solutions of a nonlinear integral equation*, Journal of Applied Mathematics, 2011, Article ID 743923.

M. Janfada, H. Baghani, **O. Baghani**, *On felbin's-type fuzzy normed linear spaces and fuzzy bounded operators*, Iranian Journal of Fuzzy Systems 8 (5), 117-130.

2010

M. Gachpazan, **O. Baghani**, *Hyers-Ulam stability of nonlinear integral equation*, Fixed Point Theory and Applications 2010, Article ID 927640.

M. Gachpazan, **O. Baghani**, *Hyers-Ulam stability of Volterra integral equation*, International Journal of Nonlinear Analysis and Applications 1 (2010), 19-25.

Conference Papers

O. Baghani, M.T. Khodadad, Some theoretical results on fractional optimal control problems, The 3rd Seminar on Control and Optimization, (2019), Hakim Sabzevari University, Iran.

S. Akefi Nia, H. Ghorbanifar, **O. Baghani**, Solving some quadratic zero-one problems by artificial dynamic neural networks and NCP functions, The 3rd Seminar on Control and Optimization, (2019), Hakim Sabzevari University, Iran. (In Persian)

M.T. Khodadad, **O. Baghani**, Numerical solution of fractional nonlinear Volterra integro-differential equations with weakly singular kernel, The 6th Seminar on Harmonic Analysis and Applications, (2018), Hakim Sabzevari University, Iran.

O. Baghani, M.T. Khodadad, Solution of fractional linear optimal control systems using triangular functions, The 1st Seminar on Control and Optimization, (2017), Ferdowsi University of Mashhad, Iran.

O. Baghani, M.T. Khodadad, Solving of Volterra optimal control problem using second Chebyshev Wavelet Method, The 1st Seminar on Control and Optimization, (2017), Ferdowsi University of Mashhad, Iran.

O. Baghani, *Distribution functions, Decreasing rearrangements and* L_p *-spaces*, The 5th Seminar on Harmonic Analysis and Applications, (2017), Ferdowsi University of Mashhad, Iran.

O. Baghani, Z. Ghazvini, *Weighted Hardy-type inequalities with sharp constants in* L_p -spaces, The 5th Seminar on Harmonic Analysis and Applications, (2017), Ferdowsi University of Mashhad, Iran.

M. J. Maleki, **O. Baghani**, M. Mashreghi, *Spectral methods for Volterra integral equations of the first kind*, The 47th Annual Iranian Mathematics Conference, (2016), Kharazmi University, Iran.

O. Baghani, *A new norm associated with fractional integral equation*, The 4th Seminar on Functional Analysis and its Applications, (2016), Ferdowsi University of Mashhad, Iran.

H. Baghani, J. F. Ostad, **O. Baghani**, *A new method for error analysis in generalized Volterra integral equations in* L_p *-spaces*, The 46th Annual Iranian Mathematics Conference, (2015), Yazd University, Iran.

O. Baghani, On existence and uniqueness of solutions of a nonlinear integral equation, The 45th Annual Iranian Mathematics Conference, (2014), Semnan University, Iran.

M. Gachpazan, **O. Baghani**, Z. Ghazvini, *Numerical solution of nonlinear integral equations using Harr wavelets*, The 44th Annual Iranian Mathematics Conference, (2013), Ferdowsi University of Mashhad, Iran.

S. Effati, **O. Baghani**, H. Baghani, *A New Approach for estimation of attraction region and asymptotic stability a system of nonlinear ODE*, The 40th Annual Iranian Mathematics Conference, (2010), University of Sharif Technology, Tehran, Iran.