



# 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.

2011-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.

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## 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

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## 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.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>

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## Journal Papers

2022

**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  $\varphi$ -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.

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## 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. Gacpazan, **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.