# 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.

## Honors

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| 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

### 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.

**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.

## 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.

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