

Curriculum Vitae

Javad Farzi, PhD

Assistant Professor of Applied Mathematics
Sahand University of Technology

Personal:

Name: Javad
Surname: Farzi
Date of Birth: 1978
Nationality: Iran
Marital Status: Single
E-mail: farzi@sut.ac.ir

Areas of Interests:

Numerical Solution of Hyperbolic Nonlinear Conservation Laws
Numerical Solution of Partial Differential Equations
Methods: Extrapolation, Non-Oscillatory, High Resolution, Finite (spectral) volume, Discontinuous Galerkin,...

Education:

B.Sc, Applied Mathematics, University of Tabriz, Tabriz, Iran, 1996-2000.
M.Sc, Applied Mathematics, University of Tabriz, Tabriz, Iran, 2000-2002.
Ph.D, Applied Mathematics, Tarbiat Modares University, Tehran, Iran, 2002-2009.

Professional Membership:

Member of Iranian Mathematical Society

Language:

Persian, Azari (mother tongue), English

Teaching Experience:

1. Probability and Statistics (BSc): Sahand University of Technology, 2007.
2. Calculus (BSc): Sahand University of Technology, 2010-Present.
3. Engineering Mathematics (BSc): Sahand University of Technology, 2008-Present.
4. Numerical Computation (BSc): Sahand University of Technology, 2007-Present.
5. Differential Equations (BSc): Sahand University of Technology, 2007-Present.
6. Numerical Solution of Partial Differential Equations (MSc): Sahand University of Technology, 2011-Present.
7. Advanced Numerical Analysis (MSc): Sahand University of Technology, 2007.

8. Numerical Solution of Ordinary Differential Equations (MSc): Sahand University of Technology, 2010-Present.
9. Advanced Engineering Mathematics (MSc): Sahand University of Technology, 2010-Present.
10. Stochastic Process for electrical engineering (MSc): Sahand University of Technology, 2010.
11. Advanced Topics in PDE (PhD): Sahand University of Technology, 2012-Present.
12. Applied Functional Analysis (PhD): Sahand University of Technology, 2012-Present.
13. Hyperbolic Partial Differential Equations (PhD): Sahand University of Technology, 2012-Present.
14. Numerical Solution of Nonlinear Hyperbolic Conservation Laws (PhD): Sahand University of Technology, 2012-Present.
15. Discontinuous Galerkin Methods (PhD): Sahand University of Technology, 2012-Present.

Graduate Students:

(Ph.D. Supervision)

- 1- Hanif Mirzaei, Ph.D., (Advisor) Eigenvalue problems of second and fourth order Sturm-Liouville equations and related inverse problem in discrete and continuous cases, August 2013.
- 2- Javad Abdi, Ph.D., (supervisor) In progress
- 3- Sulmaz Moosavi, Ph.D., (supervisor) In progress
- 4- Fayyaz Khodadosti, Ph.D., (supervisor) In progress
- 5- Afsaneh Moradi, Ph.D., (supervisor) In progress

(M.Sc. Supervision)

- 1- S. Abdi, Strong Stability Preserving Properties of Runge-Kutta Time Discretization Methods, September 2011.
- 2- M. Gholami, Finite Difference WENO Schemes with LAX-WENDROFF-Type Time Discretizations, September 2011.
- 3- F. Shareghi, The Inverse Eigenproblem Of Centrosymmetric Matrices With A Submatrix Constraint, September 2011.
- 4- S. Ahmadi, Homotopy Perturbation Method for Conservation Laws, September 2012.
- 5- A. Khajeh Mohammadi, Finite-volume WENO schemes for three-dimensional conservation laws, September 2012.
- 6- B. Abdollahi, High-Order Wave Propagation Algorithms For Hyperbolic Systems, September 2013.
- 7- E. Heidari, Discontinuous Galerkin spectral element approximations on moving meshes, September 2013.
- 8- K. Ismaeilzadeh, Finite Element Approximation Of The Linear Stochastic Wave Equation With Additive Noise, September 2013.
- 9- H. Mansouri, Stepsize conditions for boundedness in numerical initial value problems, September 2013.

- 10- A. Mohammadi, Finite difference methods for PDE with piecewise smooth solutions, September 2013.
- 11- A. Moradi, General linear methods for stiff Differential Equation, September 2014.
- 12- A. Ghasemlou, A comparison of the dispersion and dissipation errors of Gauss and Gauss-Lobatto discontinuous Galerkin spectral element methods, September 2014.
- 13- A. Haghi, Optimal explicit strong-stability-preserving general linear methods, September 2014.
- 14- R. Motamedi, Flux-Explicit IMEX Runge–Kutta Schemes For Hyperbolic To Parabolic Relaxation Problems, September 2014.
- 15- S. Arjmand, A posteriori error estimates for a discontinuous Galerkin method applied to one-dimensional nonlinear scalar conservation laws, September 2015.
- 16- H. Dalileh, Analysis of Optimal Superconvergence of Discontinuous Galerkin Method for Linear Hyperbolic Equations, September 2015.**
- 17- N. Karimian, A Simple Weighted Essentially Nonoscillatory Limiter (WENO) for Runge-Kutta Discontinuous Galerkin Methods, September 2015.
- 18- F. Aghaei, A Local Discontinuous Galerkin Method For KdV Type Equations, September 2016.**
- 19- R. Jeddi, The direct discontinuous Galerkin (DDG) methods for diffusion problems, In progress.**
- 20- Z. Radi, An analysis of and a comparison between the discontinuous Galerkin and the spectral finite volume methods, September 2016.**
- 21- M. Mahmoud Salehi, On maximum-principle-satisfying high order schemes for scalar conservation laws, September 2016.**
- 22- A. Abyar, A review on TVD schemes and a refined flux-limiter for steady-state calculations, In progress.
- 23- M. Bahmani Rad, A Discontinuous Galerkin Finite Element Method For Hamilton–Jacobi Equations, In progress.

Computer and Software Skills:

- Matlab
- Maple
- *Mathematica*
- Visual C++
- Fortran
- Latex, Xpersian, Metapost and Microsoft Word

Training Courses and Workshops Attended:

- Partial Differential Equations, IPM, 2003, Tehran-Iran.
- Nonlinear Analysis and Optimization, Isfahan University, May 2005, Isfahan-Iran.
- The First Workshop on Finite Element Methods for PDEs, University of Kurdistan, April 2016, Sanandaj-Iran.

Publications:

1. J. Farzi, and S.M. Hosseini, (2009), A high order method for the solution of a one-way wave equation in heterogeneous media, Far East J. Appl. Math., Vol. 36, No. 3, pp. 317-330.
2. J. Farzi (2013), A High Order Immersed Interface Method for two dimensional Acoustic Wave Equation with Discontinuous Coefficients, Computational Methods for Differential Equations, 1(1):1-15.
3. Javad Farzi (2014), Generalized extrapolation methods for solving nonlinear Fredholm integral equations, Mathematical Communications ,19(2):375-390.
4. J. Farzi, S. Mohammad Hosseini (2014), High order immersed interface method for acoustic wave equation with discontinuous coefficients, Iranian Journal of Numerical Analysis and Optimization, 4(1):1-24.
5. Javad Farzi (2016), Global error estimation of linear multistep methods through the Runge-Kutta methods, Iranian Journal of Numerical Analysis and Optimization, 6 (2): 99-120, DOI: [10.22067/ijnao.v6i2.35736](https://doi.org/10.22067/ijnao.v6i2.35736).
6. Ongun M.Y., Arslan D., Farzi J. (2017), Numerical Solutions of Fractional Order Autocatalytic Chemical Reaction Model, Süleyman Demirel University Journal of Natural and Applied Sciences, DOI: [10.19113/sdufbed.24679](https://doi.org/10.19113/sdufbed.24679)
7. J. Farzi, F. Khodadoosti, A Total Variation Diminishing High Resolution Scheme for Nonlinear Conservation Laws, Accept for publication in Computational Methods for Differential Equations.

Submitted:

8. J. Farzi, A. Moradi, Numerical solution of fuzzy differential equations with general linear methods: linear multistep methods, submitted.
9. J. Farzi, A. Moradi, The finite mode Predictor-Corrector methods in the framework of general linear methods (in Persian), submitted.
10. J. Farzi, S. Moosavi Yeganeh, A class of non-oscillatory DST schemes for solving linear hyperbolic conservation laws, submitted.

Conference Presentations:

1. Javad Farzi, A Class Of Fully Discrete TVD Schemes For Solving Hyperbolic Conservation Laws, Ukrainian Conference on Applied Mathematics (UCAM-2017), Lviv-Ukraine, 28-30 September 2017.
2. S. Mousavi Yeganeh, J.Farzi, Optimal Order Maximum Principle Preserving DST Scheme For Linear Hyperbolic Conservation Laws, Ukrainian Conference on Applied Mathematics (UCAM-2017), Lviv-Ukraine, 28-30 September 2017.

3. Javad Farzi, Javad Abdi, Hadi Feyzollah zadeh, Numerical solutions of the fractional Black-Scholes equation for valuation of barrier option, The 6th seminar on Numerical Analysis and its Applications, July 2016, Maragheh-Iran.
4. J. Farzi, F. Khodadosti, A positive scheme for advection-diffusion equation, The 6th seminar on Numerical Analysis and its Applications, July 2016, Maragheh-Iran.
5. S. Mousavi Yeganeh and J. Farzi, A non-oscillatory DST scheme for solving linear scalar Conservation laws, The 6th seminar on Numerical Analysis and its Applications, July 2016, Maragheh-Iran.
6. Z. Radi and J. Farzi, A comparison between discontinuous Galerkin and high order Spectral Finite Volume Methods for Scalar Hyperbolic Conservation Laws , The 6th seminar on Numerical Analysis and its Applications, July 2016, Maragheh-Iran. (In Persian)
7. J. Farzi, S. Mohammad Hosseini, Numerical Solution of Linear Hyperbolic Equations with Interface, AIMC37, Tabriz, Iran, September 2006.
8. J. Farzi and A. Abdi, S. Mohammad Hosseini, Resolution of Gibbs Phenomenon in Fourier Approximation, AIMC37, Tabriz, Iran, September 2006.(In Persian)
9. N. Karimian and J. Farzi, A Simple Weighted Essentially Nonoscillatory Limiter (WENO) for Runge-Kutta Discontinuous Galerkin Methods, The 46th Annual Iranian Mathematics Conference, Yazd-Iran, August 2015. (In Persian)
10. H. Dalileh and J. Farzi, Discontinuous Galerkin methods based on Radau points for Hyperbolic Conservation Laws, The 46th Annual Iranian Mathematics Conference, Yazd-Iran, August 2015. (In Persian)
11. J. Abdi and J. Farzi, Entropy fixes for approximate Riemann solvers, The 45th Annual Iranian Mathematics Conference, Semnan-Iran, August 2014.
12. A. Moradi and J. Farzi, Fuzzy General Linear Methods, 14th Iranian Conference in Fuzzy Systems, August 2013, Sahand University of Technology, Tabriz-Iran. (In Persian)
13. R. Motamedi and J. Farzi, Implicit-Explicit Schemes for Hyperbolic systems with Diffusive Relaxation, 12th seminar on Differential Equations and Dynamical Systems, Tabriz-Iran, May 2015. (In Persian)
14. J. Farzi, A. F. Bastani and J. Abdi, A TVD Numerical Method for PDE Models of Asian Options, 12th seminar on Differential Equations and Dynamical Systems, Tabriz-Iran, May 2015.
15. J. Farzi, High order numerical solution of the linear integral equations, FIFTH CONFERENCE ON NUMERICAL ANALYSIS (NumAn 2012), Ioannina- Greece, September 2012.
16. R. Motamedi and J. Farzi, Flux-Explicit Schemes For Hyperbolic To Parabolic Relaxation Problems, 2nd National Conference On Mathematics And Its Applications, Malayer-Iran, May 2015. (In Persian)
17. A. Moradi and J. Farzi, Predictor-Corrector Schemes In The General Linear Methods Framework, The 45th Annual Iranian Mathematics Conference, Semnan-Iran, August 2014. (In Persian)
18. J. Abdi and J. Farzi, Embedded Optimal SSP Runge-Kutta Pairs With ENO Special Discretization For Nonlinear Hyperbolic Conservation Laws, The 44th Annual Iranian Mathematics Conference, Mashhad-Iran, August 2013.
19. A. Khajeh Mohammadi and J. Farzi, Central WENO Schemes for System Of Hyperbolic Conservation Laws, The 43rd Annual Iranian Mathematics Conference, University of

Tabriz, Tabriz, Iran, August 2012. (In Persian)

20. J. Farzi and S. Ahmadi, An Expansion Method For Nonlinear Schrodinger Equation, The 42nd Annual Iranian Mathematics Conference, Rafsanjan- Iran, August 2012. (In Persian)
21. F. Shareghi and J. Farzi, The Inverse Problem For Extended Symmetric Matrices, The 43rd Annual Iranian Mathematics Conference, University of Tabriz, Tabriz, Iran, August 2011. (In Persian)
22. J. Farzi and M. Gholami, WENO5-LF Scheme For Solving One-Dimensional Conservation Laws, The 42nd Annual Iranian Mathematics Conference, Rafsanjan- Iran, August 2011. (In Persian)

Hobbies:

- Mountain Climbing
- Volleyball
- Futsal
- Swimming