

CV



Mohammad Hadi Noori Skandari

Associate Professor in Applied Mathematics

(December 1, 2024)

----- ADDRESS

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----- PERSONAL STATEMENT

Date of birth: April 12, 1983

Position of birth: Mashhad, Iran

----- EMPLOYMENT HISTORY

02/2014 - present Department of Applied mathematics, Shahrood University of Technonlogy, Iran

----- EDUCATION

09/2002 – 07/2006 **B.Sc.** : Applied Mahematics

Department of Applied Mathematics, Ferdowsi University of Mashhad, Mashhad, Iran

09/2006 – 12/2008 **M.Sc.** : Applied Mahematics (Control and Optimization)

Department of Applied Mathematics, Ferdowsi University of Mashhad, Mashhad, Iran

Thesis Title: Determination of attenuation map and corrected images in SPECT by mathematical programming

Supervisor: Prof. Ali Vahidian Kamyad

Advisor: Prof. Mohsen Hajizadeh Saffar

09/2009 – 09/2013 Ph.D. : Applied Mathematics (Control and Optimization)

Department of Applied Mathematics, Ferdowsi University of Mashhad, Iran

Supervisor: Prof. Ali Vahidian Kamyad

Advisors: Prof. Mohammad Hadi Farahi and Prof. Sohrab Effati

Thesis Title: Optimal Control of a Class of Nonsmooth Systems

----- **RESEARCH INTERESTS**

- Control systems
- Optimal control
- Pseudospectral methods
- Fuzzy modeling
- Nonsmooth systems including ODEs and PDEs
- Stability of nonlinear systems
- Mathematical biology
- Fractional Calculus

----- **SKILLS**

Mathematical Software: MATLAB

Language: Persian and English

----- **REFEREEING SERVICE (Journals)**

- Optimal control, applications and methods
- Nonlinear Dynamics
- IMA Mathematical Control and Information
- Applied Mathematical Modelling
- Iranian Journal of Numerical Analysis and Optimization
- Neural Networks and Applications
- Neural Computing and Applications
- Information Technology and Control
- Control and Measurements
- Numerical Algorithm
- Advanced Mathematical Modelling
- International Journal of System Sciences
- Control and Optimization in Applied Mathematics

----- **TEACHING**

- Calculus 1, 2
- Numerical analysis
- Differential equations (ODEs and PDEs)
- Engineering mathematics
- Calculus of variations and optimal control
- Control systems

- Advanced linear optimization
- Advanced nonlinear optimization

----- RESEARCH PAPERS

----- Published Journal Papers -----

- 1- M. Hedayati, HA Tehrani, A Fakharzadeh, **M. H. Noori Skandari**, An Expanded hp-Method for Solving Nonsmooth Time Delay Optimal Control Problems, *Journal of Mathematics* , **2024**
- 2- Z. Pirouzeh, **M. H. Noori Skandari**, KN Pirbazari, S Shateyi, A pseudo-spectral approach for optimal control problems of variable-order fractional integro-differential equations, *Aims Mathematics*, **2024**
- 3- M. Heydari, M. Ghovatmand, **M. H. Noori Skandari**, D. Baleanu, An Efficient Convergent Approach for Difference Delayed Reaction-Diffusion Equations, *European Journal of Pure and Applied Mathematics*, **2024**
- 4- N. Peykrayegan, M. Ghovatmand, **M. H. Noori Skandari**, S Shateyi, Numerical solution of nonlinear fractional delay integro-differential equations with convergence analysis *Indian Journal of Pure and Applied Mathematics*, **2024**
- 5- Y. Huang, N. Tohidi Rad, **M. H. Noori Skandari**, E. Tohidi, A spectral collocation scheme for solving nonlinear delay distributed-order fractional equations, *Journal of Computational and Applied Mathematics*, **2024**
- 6- M. Ghaznavi, **M. H. Noori Skandari**, A Chebyshev pseudo-spectral based approach for solving Troesch's problem with convergence analysis, *Computational Methods for Differential Equations*, **2024**
- 7- Z Pirouzeh, **M. H. Noori Skandari**, K. N. Pirbazari, A Convergent Legendre Spectral Collocation Method for the Variable-Order Fractional-Functional Optimal Control Problems, *Journal of Mathematics*, **2024**
- 8- Y. Yang, **M. H. Noori Skandari**, J. Zhang, A Pseudospectral Method for Continuous-Time Nonlinear Fractional Programming, *Filomat*, **2023**
- 9- N. Ramroodi, H. A. Tehrani, **M. H. Noori Skandari**, Numerical behavior of the variable-order fractional Van der Pol oscillator, *Journal of computational sciences*, **2023**
- 10- N. Peykrayegan, M. Ghovatmand, **M. H. Noori Skandari**, Convergence analysis of Jacobi pseudospectral method for delay fractional integral-differential equations in $L^2_{\omega^{\alpha, \beta}}(I)$ space, *Journal of Advanced Mathematical Modeling*, **2023**
- 11- M. Heidari, M. Ghovatmand, **M. H. Noori Skandari**, D Baleanu, Numerical Solution of Reaction–Diffusion Equations with Convergence Analysis, *Journal of Nonlinear Mathematical Physics* , **2023**
- 12- **M. H. Noori Skandari**, M Mahmoudi, J Vahidi, M Ghovatmand, Legendre pseudo-spectral method for solving multi-pantograph delay differential equations, *Journal of New Researches in Mathematics* , **2022**
- 13- M. Mahmoudi, M. Ghovatmand, **M. H. Noori Skandari**, Solving a class of nonlinear delay Fredholm integro-differential equations with convergence analysis, *Mathematical Modelling and Computing*, **2022**
- 14- X. Xie, M. Xie, A. J. Moshayedi, **M. H. Noori Skandari**, A Hybrid Improved Neural Networks Algorithm Based on L2 and Dropout Regularization, *Mathematical Problems in Engineering*, **2022**.
- 15- M. Heidari, M. Ghovatmand, **M.H. Noori Skandari**, D. Baleanu, Numerical Solution of Reaction–Diffusion Equations with Convergence Analysis, **2022**.
- 16- M. Hedayati, Hojat Ahsani Tehrani, A. Fakharzadeh, **M. H. Noori Skandari**, D. Baleanu, An efficient hp spectral collocation method for nonsmooth optimal control problems, *Kybernetika*, **2022**.
- 17- **M. H. Noori Skandari**, M. Mahmoudi, J. Vahidi, M. Ghovatmand, Legendre pseudo-spectral method for solving multi-pantograph delay differential equations, *Journal of New Researches in Mathematics*, **2022**.
- 18- M. Mahmoudi, M. Ghovatmand, **M. H. Noori Skandari**, Solving a class of nonlinear delay Fredholm integro-differential equations with convergence analysis, *Mathematical Modelling and Computing* 9 (2), 375-384, **2022**.

- 19- X Yang, Y Yang, **M. H. Noori Skandari**, E Tohidi, S Shateyi, A new local non-integer derivative and its application to optimal control problems, *AIMS Mathematics* 7 (9), 16692-16705, **2022**.
- 20- M. Hedayati, H. A. Tehrani, A. Fakharzadeh J. , **M. H. Noori Skandari**, D. Baleanu, A novel high accurate numerical approach for the time-delay optimal control problems with delay on both state and control variables, *AIMS Mathematics* 7 (5), 9789-9808, **2022**.
- 21- N. Peykayegan, M. Ghovatmand, **M. H. Noori Skandari** and D. Baleanu, An approximate approach for fractional singular delay integro-differential equations, *AIMS Mathematics* 7 (5), 9156–9171, **2022**.
- 22- P Xiaobing, X Yang, **M. H. Noori Skandari**, E Tohidi, S Shateyi, A new high accurate approximate approach to solve optimal control problems of fractional order via efficient basis functions *Alexandria Engineering Journal* 61 (8), 5805-5818, **2021**.
- 23- N. Peykayegan, M. Ghovatmand, **M. H. Noori Skandari**, An efficient method for linear fractional delay integro-differential equations, *Computational and Applied Mathematics* 40 (7), 1-33, **2021**.
- 24- H Jafari, M Mahmoudi, **M.H.Noori Skandari**, A new numerical method to solve pantograph delay differential equations with convergence analysis, *Advances in Difference Equations* **2021** (129), 1-12
- 25- Yu Huang, F. Mohammadzadeh, **M. H. Noori Skandari** , H. A. Tehrani, E. Tohidi, Space–time Chebyshev spectral collocation method for nonlinear time-fractional Burgers equations based on efficient basis functions, *Mathematical methods in the applied sciences*, **2020**.
- 26- N. Peykayegan M. Ghovatmand, **M. H. Noori Skandari**, On the convergence of Jacobi-Gauss collocation method for linear fractional delay differential equations, *Mathematical methods in the applied sciences*, **2020**
- 27- Mostafa Nazari, Morteza Nazari, Mohammad Hadi **Noori Skandari**, Pseudo-spectral method for controlling the drug dosage in cancer, *IET Systems Biology* 14 (5), 261-270, **2020**
- 28- Yin Yang, **M. H. Noori Skandari**, Pseudospectral method for fractional infinite horizon optimal control problems, *Optimal Control Applications and Methods*, **2020**
- 29- M Mahmoudi, M Ghovatmand, **M. H. Noori Skandari**, A New Convergent Pseudospectral Method for Delay Differential Equations, *Iranian Journal of Science and Technology, Transactions A: Science*, **2020**.
- 30- **M. H. Noori Skandari**, M. Habibli, A. Nazemi, A direct method based on the Clenshaw-Curtis formula for fractional optimal control problems, *Mathematical Control & Related Fields* 10 (1), 171, **2020**.
- 31- Yu Huang, Mohammad Hadi **Noori Skandari**, Fatemeh Mohammadzadeh, Hojjat Ahsani Tehrani, Svetlin Georgiev Georgiev, Emran Tohidi and Stanford Shateyi, Space–Time Spectral Collocation Method for Solving Burgers Equations with the Convergence Analysis, *Symmetry* 11, **2019**.
- 32- M Mahmoudi, M Ghovatmand, **M.H. Noori Skandari**, A novel numerical method and its convergence for nonlinear delay Volterra integro-differential equations, *Mathematical Methods in the Applied Sciences*, **2019**.
- 33- F. Mohammadzadeh, H. A. Tehrani, **M. H. Noori Skandari**, Chebyshev pseudo-spectral method for optimal control problem of Burgers’ equation, *Iranian Journal of Numerical Analysis and Optimization* 9 (2), **2019**.
- 34- Tehrani H. A., **Noori Skandari** M. H., Georgiev S. G. , Mohammadzadeh F., A Novel Proof on the Existence of the Solution of Fractional Control Problem Governed by Burgers Equations, *Journal of partial differential equations*, 32 (2), 129-143, **2019**.
- 35- **M.H. Noori Skandari**, Universal Approximator Property of the Space of Hyperbolic Tangent Functions, *Biquarterly Research Journal of Control and Optimization in applied mathematics*, **2019**.
- 36- **M. H.Noori Skandari**, M. Ghaznavi, M. Abedian, Stabilizer control design for nonlinear systems based on the hyperbolic modelling, *Applied Mathematical Modelling* 67, 413-429, **2019**.
- 37- F. Mohammadzadeh, H. A. Tehrani, S. G. Georgiev, **M. H.Noori Skandari**, An optimal control problem associated to a class of fractional Burgers' equations, *Asian-European Journal of Mathematics*, **2019**.
- 38- S. G. Georgiev, F. Mohammadzadeh, H.A. Tehrani, **M. H. Noori Skandari**, On the Solution of Fractional Burgers’ Equation and Its Optimal Control Problem, *Analysis in Theory and Applications*, 35 (4), **2019**.
- 39- M. Habibli and **M.H. Noori Skandari**, Fractional Chebyshev pseudospectral method for fractional optimal control problems, *Optimal control applications and methods*, **2019**.
- 40- **M. H. Noori Skandari**, M Ghaznavi, An efficient algorithm for solving fuzzy linear programming problems, *Neural Processing Letters* 48 (3), 1563-1582, **2018**.

- 41- **M. H. Noori Skandari**, A Nazemi, A new approach to design asymptotically stabilizing control and adaptive control, *Optimal Control Applications and Methods*, **2018**.
- 42- **M. H. Noori Skandari**, M Ghaznavi, A numerical method for solving shortest path problems, *Calcolo* 55 (1), 1-18, **2018**.
- 43- M. Ghaznavi and **M. H. Noori Skandari**, LCPI method to find optimal solutions of nonlinear programming problems, *World Journal of Modelling and Simulation* 14 (1), 50-57, **2018**.
- 44- **MH Noori Skandari**, M Ghaznavi, A novel technique for a class of singular boundary value problems, *Computational Methods for Differential Equations* 6 (1), 40-52, **2018**.
- 45- **M. H. Noori Skandari**, M. Ghaznavi, Optimal control approach for discontinuous dynamical systems, *Optimal Control Applications and Methods*, 38(6), 1004–1013, **2017**.
- 46- **M. H. Noori Skandari**, M. Ghaznavi, Chebyshev Pseudo-Spectral Method for Bratu's Problem, *Iranian Journal of Science and Technology, Transactions A: Science*, 41(4), 913-921, **2017**.
- 47- **M. H. Noori Skandari**, On the Validity of Nonlinear and Nonsmooth Inequalities, *I.J. Intelligent Systems and Applications*, 9 (1), 60-66, **2017**.
- 48- **M. H. Noori Skandari**, A.V. Kamyad, S Effati, Smoothing approach for a class of nonsmooth optimal control problems, *Applied Mathematical Modelling*, 40 (2), 886-903, **2016**.
- 49- M Ghaznavi, **M. H. Noori Skandari**, An Efficient Pseudo-Spectral Method for Nonsmooth Dynamical Systems, *Iranian journal of science and technology; Transaction A: Science*, DOI: 10.1007/s40995-016-0040-9, **2016**.
- 50- **M. H. Noori Skandari**, On the stability of a class of nonlinear control systems, *Nonlinear dynamics*, 80(3), 1245–1256, **2015**.
- 51- H. R. Erfanian, **M. H. Noori Skandari**, A.V. Kamyad, Control of a class of nonsmooth dynamical systems, *Journal of Vibration and Control*, 21 (11), 2212-2222, **2015**.
- 52- H. R. Erfanian, **M. H. Noori Skandari**, A.V. Kamyad, A New Approach for Generalized Partial Derivatives of Non-smooth Functions, *Walailak Journal of Science and Technology (WJST)* 11 (12), 1031-1040, **2014**.
- 53- **M. H. Noori Skandari**, A.V. Kamyad, S. Effati, Generalized Euler–Lagrange equation for nonsmooth calculus of variations, *Nonlinear Dynamics* 75 (1-2), 85-100, **2014**.
- 54- S. Oloomi, **H. N Eskandari**, S. R. Zakavi, P. Knoll, F. Kalantari, M. H. Saffar, A New Approach for Scatter Removal and Attenuation Compensation from SPECT/CT Images, *Iranian journal of basic medical sciences* 16 (11), 1181-1189, **2013**.
- 55- E.R. Erfanian, **M. H. Noori Skandari**, A. V. Kamyad, A numerical approach for nonsmooth ordinary differential equations, *Journal of Vibration and Control*, 19(14), 2124-2136, **2013**.
- 56- **M. H. Noori Skandari**, H. R Erfanian, A.V. Kamyad, M. H Farahi, Solving a Class of Non-Smooth Optimal Control Problems, *I. J. of Intelligent Systems and Applications*, 5(7), 16-22, **2013**.
- 57- H. R. Erfanian, **M. H. Noori Skandari**, A.V. Kamyad, A new approach for the generalized first derivative and extension it to the generalized second derivative of nonsmooth functions, *I. J. of Intelligent Systems and Applications*, 5(4), 100-107, **2013**.
- 58- H. R. Erfanian, **M. H. Noori Skandari**, A.V. Kamyad, A Novel Approach for Solving Nonsmooth Optimization Problems with Application to Nonsmooth Equations, *Journal of Mathematics*, DOI: 10.1155/2013/750834, **2013**.
- 59- **M. H. Noori Skandari**, A. Vahidian Kamyad, H. R. Erfanian, A new practical generalized derivative for nonsmooth functions, *The Electronic Journal of Mathematics and Technology*, 7(1), **2013**.
- 60- **M. H. Noori Skandari**, H. R. Erfanian, A.V. Kamyad, S Mohammadi, Optimal control of bone marrow in cancer chemotherapy, *European Journal of Experimental Biology*, 2(3), 562-569, **2012**.
- 61- S. Effati, **M. H. Noori Skandari**, Optimal control approach for solving linear Volterra integral equations, *International Journal of Intelligent Systems and Applications*, 4(4), 40-46, **2012**.
- 62- **M. H. Noori Skandari**, M. H. Farahi, Optimal control for general n-compartmental models in cancer chemotherapy using measure theoretical approach, *International journal of sensing, computing & control*, 2(1), 27-37, **2012**.

- 63- **M. H. Noori Skandari**, H.R. Erfanian, A. Vahidian Kamyad, Generalized derivative of fuzzy nonsmooth functions, Journal of Uncertain Systems, 6(3), 214-222, **2012**.
- 64- H. R. Erfanian, **M.H. Noori Skandari**, A. V. Kamyad, Solving a class of separated continuous programming problems using linearization and discretization, International journal of sensing, computing & control, 1(2), 117-124, **2011**.
- 65- E. Tohidi, **M. H. Noori Skandari**, A new approach for a class of nonlinear optimal control problems using linear combination property of intervals, J. of Computations and Modelling, 1, 145-156, **2011**.
- 66- A Vahidian Kamyad, **M. H. Noori Skandari**, HR Erfanian, A new definition for generalized first derivative of nonsmooth functions, Applied Mathematics, 2(10), 1252-1257, **2011**.
- 67- **M. H. Noori Skandari**, H. R Erfanian, A Vahidian Kamyad, A new approach for a class of optimal control problems of volterra integral equations, Intelligent Control and Automation, 2(2), 121-125, **2011**.
- 68- **M. H. Noori Skandari**, E. Tohidi, Numerical solution of a class of nonlinear optimal control problems using linearization and discretization, Applied Mathematics 2, 646-652, **2011**.
- 69- H. R Erfanian, **M. H. Noori Skandari**, Optimal control of an HIV model, The Journal of Mathematics and Computer Science, 2 (4), 650-658, **2011**.
- 70- A. V. Kamyad, **M. H. Noori Skandari**, M. N. Midani, M.H. Saffar, New approach for attenuation correction in SPECT images, using linear optimization, International Journal of Radiation Research, 8(2), 111-116, **2010**.

----- Conference Papers in Persian-----

- ۱- مدل کنترلی- دیفرانسیلی مغز استخوان در شیمی درمانی سرطان ، چهل ونهمین کنفرانس ریاضی ایران
- ۲- بررسی شرایط پایداری سیستم های کنترل فازی تاکاگی- سوگینو، دومین سمینار کنترل و بهینه سازی
- ۳- طراحی کنترل برای سیستم های کسری، اولین کنفرانس ملی مدل سازی ریاضی در علم، فناوری و سیستم های هوشمند
- ۴- رهیافتی برای طراحی کنترل تطبیقی، دومین سمینار ملی کنترل و بهینه سازی
- ۵- بازسازی تصاویر SPECT در پزشکی بر مبنای مدل دوجمله ای منفی، چهاردهمین کنفرانس آمار ایران
- ۶- یک رهیافت تقریبی برای کنترل سیستم های غیرخطی ، دومین کنفرانس ملی و اولین کنفرانس بین المللی "محاسبات نرم و سیستم های هوشمند"
- ۷- یک رهیافت تقریبی برای حل رده های خاص از مسائل کنترل بهینه کسری، ۴۸ امین کنفرانس ریاضی ایران

----- Conference Papers in English-----

- 8- A new stabilizer control for the ball-beam mechanical system, The first seminar on the control and optimization.
- 9- An approximate solution for Burgers-Fisher equation, 48th Iranian Mathematical Conference.
- 10- An approximate solution for optimal control problem of Burgers equation, The first seminar on the control and optimization.
- 11- A new stabilizer control for the ball-beam mechanical system, 12th international Conference of Iranian Society of Operations Research
- 12- Optimal control of variable-order fractional RLC electric circuits, MHN Skandari, 55 Annual Iranian Mathematics Conference, 2024