

Amin Jajarmi

Associate Professor of Electrical Engineering, University of Bojnord, Iran

PERSONAL DATA

Full Name: Amin Jajarmi

Birth date: April 4, 1982

Address: Department of Electrical Engineering, University of Bojnord, P.O. Box, 94531-1339, Bojnord, Iran

Tel.: +98-915-5049161

E-mail: a.jajarmi@ub.ac.ir; a.jajarmi@gmail.com

EDUCATION

2018 (Aug.-Sept.) Visiting Researcher

- Department of Mathematics, Faculty of Arts and Sciences, Cankaya University, 06530 Ankara, Turkey
- *Supervisor:* Prof. Dr. Dumitru Baleanu

2011 (Jul.-Dec.) Visiting Researcher

- System Theory and Automatic Control Laboratory, Institute for Automation Engineering (IFAT), Otto-von-Guericke University Magdeburg, Magdeburg, Germany
- *Supervisor:* Prof. Dr.-Ing. Rolf Findeisen

2011 (Apr.-June) Visiting Researcher

- Computer Vision and Neural Networks Research Laboratory, Electrical and Electronics Engineering Department, Middle East Technical University, Ankara, Turkey
- *Supervisor:* Prof. Kemal leblebicioğlu

2007-2012 Ph.D. in Control Engineering, Ferdowsi University of Mashhad, Iran

- *Supervisors:* Prof. Ali Vahidian Kamyad and Prof. Naser Pariz
- *Thesis Title:* Solving a Class of Nonlinear Optimal Control Problems Using Modal Series

2005-2007 MSc. in Control Engineering, Ferdowsi University of Mashhad, Iran

- *Supervisors:* Prof. Ali Vahidian Kamyad and Prof. Naser Pariz
- *Thesis Title:* A Global Parametric Linear Treatment of Nonlinear Systems

2001-2005 BSc. in Control Engineering, Ferdowsi University of Mashhad, Iran

- *Supervisor:* Dr. Ali Karimpour
- *Dissertation Title:* Control of an Inverted Pendulum

AWARDS

- **Awards for Young Scientists**, Istanbul Gelisim University, Turkey (2019)
- **Best academic staff researcher award**, University of Bojnord, Iran (2018)
- **Best Ph.D. student researcher award**, Ferdowsi University of Mashhad, Iran (2011)
- **Awarded Scholarship for the whole of Ph.D. program**, Ministry of Science, Research and Technology of Iran (2007-2012)
- **Nation-wide distinguished Ph.D. student award**, Ministry of Science, Research and Technology of Iran (selected among all doctoral students of Iran universities) (2012)

H-INDEX

- Web of Science: 26
- Scopus: 27
- Google Scholar: 28

CITATION

- Web of Science: 1356 (Without self-citations: 1235)
- Scopus: 1563
- Google Scholar: 1791

HOT AND HIGHLY CITED PAPERS

- Hot Paper: 9
- Highly Cited Paper: 17

EDITORIAL BOARD

- Progress in Fractional Differentiation and Applications
- Discontinuity, Nonlinearity, and Complexity

TECHNICAL SKILLS

- *Engineering Software*: MATLAB, MAPLE

RESEARCH INTERESTS

- Computational methods of optimal control problems
- Fractional modelling with real-world applications
- Nonlinear dynamics and fractional-order systems

PUBLICATIONS

Selected Journal Papers:

1. S Rezapour, H Mohammadi, A Jajarmi, A new mathematical model for Zika virus transmission, *Advances in Difference Equations* 2020, 589, 2020.
2. JH Asad, D Baleanu, B Ghanbari, A Jajarmi, H Mohammadi Pirouz, Planar system-masses in an equilateral triangle: numerical study within fractional calculus, *CMES-Computer Modeling in Engineering & Sciences* 124 (3), 953-968, 2020.
3. SS Sajjadi, D Baleanu, A Jajarmi, H Mohammadi Pirouz, A new adaptive synchronization and hyperchaos control of a biological snap oscillator, *Chaos, Solitons & Fractals* 138, 109919, 2020.
4. A Jajarmi, D Baleanu, A New Iterative Method for the Numerical Solution of High-order Nonlinear Fractional Boundary Value Problems, *Frontiers in Physics* 8, 220, 2020.
5. A Jajarmi, A Yusuf, D Baleanu, M Inc, A new fractional HRSV model and its optimal control: A non-singular operator approach, *Physica A: Statistical Mechanics and its Applications* 547, 123860, 2020.
6. D Baleanu, A Jajarmi, H Mohammadi, S Rezapour, A new study on the mathematical modelling of human liver with Caputo-Fabrizio fractional derivative, *Chaos, Solitons & Fractals* 134, 109705, 2020.
7. D Baleanu, A Jajarmi, SS Sajjadi, JH Asad, The fractional features of a harmonic oscillator with position-dependent mass, *Communications in Theoretical Physics* 72 (5), 055002, 2020.

8. T Akman Yıldız, A Jajarmi, B Yıldız, D Baleanu, New aspects of time fractional optimal control problems within operators with nonsingular kernel, *Discrete and Continuous Dynamical Systems - Series S* 13 (3), 407-428, 2020.
9. SS Sajjadi, A Jajarmi, A Hajipour, Steam generator identification using piecewise affine model, *Results in Nonlinear Analysis* 2 (4), 149-159, 2019.
10. A Jajarmi, D Baleanu, On the fractional optimal control problems with a general derivative operator, *Asian Journal of Control*, 2019. (accepted) DOI: <https://doi.org/10.1002/asjc.2282>
11. A Jajarmi, S Arshad, D Baleanu, A new fractional modelling and control strategy for the outbreak of dengue fever, *Physica A: Statistical Mechanics and its Applications* 535, 122524, 2019.
12. A Jajarmi, D Baleanu, SS Sajjadi, JH Asad, A new feature of the fractional Euler-Lagrange equations for a coupled oscillator using a nonsingular operator approach, *Frontiers in Physics* 7, 196, 2019.
13. A Jajarmi, B Ghanbari, D Baleanu, A new and efficient numerical method for the fractional modelling and optimal control of diabetes and tuberculosis co-existence, *Chaos: An Interdisciplinary Journal of Nonlinear Science* 29 (9), 093111, 2019.
14. M Hassan Abadi, AM Vaziri, A Jajarmi, On a new and efficient numerical technique to solve a class of discrete-time nonlinear optimal control problems, *Journal Européen des Systèmes Automatisés* 53 (3), 305-316, 2019.
15. D Baleanu, A Jajarmi, SS Sajjadi, D Mozyrska, A new fractional model and optimal control of a tumor-immune surveillance with non-singular derivative operator, *Chaos: An Interdisciplinary Journal of Nonlinear Science* 29 (8), 083127, 2019.
16. A Jajarmi, M Hajipour, SS Sajjadi, D Baleanu, A robust and accurate disturbance damping control design for nonlinear dynamical systems, *Optimal Control Applications and Methods* 40 (3), 375-393, 2019.
17. D Baleanu, SS Sajjadi, A Jajarmi, JH Asad, New features of the fractional Euler-Lagrange equations for a physical system within non-singular derivative operator, *The European Physical Journal Plus*, 134, 181, 2019.
18. M Hajipour, A Jajarmi, D Baleanu, HG Sun, On an accurate discretization of a variable-order fractional reaction-diffusion equation, *Communications in Nonlinear Science and Numerical Simulation* 69, 119-133, 2019.
19. D Baleanu, A Jajarmi, JH Asad, Classical and fractional aspects of two coupled pendulums, *Romanian Reports in Physics* 71(1), 130, 2019.
20. SS Sajjadi, A Karimpour, N Pariz, A Jajarmi, A new switched off-line NMPC approach for nonlinear systems with a switching performance index using an extended modal series method, *Optimal Control Applications and Methods* 39 (6), 1935-1951, 2018.
21. E Mohammadzadeh, N Pariz, SK Hosseini-Sani, A Jajarmi, An efficient numerical method for the optimal control of fractional-order dynamic systems, *Journal of Vibration and Control* 24 (22), 5312-5320, 2018.
22. M Hajipour, A Jajarmi, D Baleanu, On the accurate discretization of a highly nonlinear boundary value problem, *Numerical Algorithms* 79 (3), 679-695, 2018.
23. F Mohammadi, L Moradi, D Baleanu, A Jajarmi, A hybrid functions numerical scheme for fractional optimal control problems: application to non-analytic dynamical systems, *Journal of Vibration and Control* 21 (24), 5030-5043, 2018.
24. D Baleanu, A Jajarmi, M Hajipour, On the nonlinear dynamical systems within the generalized fractional derivatives with Mittag-Leffler kernel, *Nonlinear Dynamics* 94 (1), 397-414, 2018.
25. A Jajarmi, M Hajipour, An efficient iterative eigenvalue decomposition approach for the optimal control of time-delay systems, *IMA Journal of Mathematical Control and Information* 35 (3), 987-1004, 2018.

26. A Jajarmi, M Hajipour, D Baleanu, A new approach for the optimal control of time-varying delay systems with external persistent matched disturbances, *Journal of Vibration and Control* 24 (19), 4505-4512, 2018.
27. A Jajarmi, D Baleanu, A new fractional analysis on the interaction of HIV with CD4+ T-cells, *Chaos, Solitons & Fractals* 113, 221-229, 2018.
28. D Baleanu, JH Asad, A Jajarmi, The fractional model of spring pendulum: new features within different kernels, *Proceedings of the Romanian Academy, Series A* 19 (3), 447-454, 2018.
29. D Baleanu, A Jajarmi, E Bonyah, M Hajipour, New aspects of the poor nutrition in the life cycle within the fractional calculus, *Advances in Difference Equations* 2018 (1), 230, 2018.
30. D Baleanu, JH Asad, A Jajarmi, New aspects of the motion of a particle in a circular cavity, *Proceedings of the Romanian Academy, Series A* 19 (2), 361-367, 2018.
31. A Jajarmi, M Hajipour, E Mohammadzadeh, D Baleanu, A new approach for the nonlinear fractional optimal control problems with external persistent disturbances, *Journal of the Franklin Institute* 335 (9), 3938-3967, 2018.
32. A Jajarmi, D Baleanu, Suboptimal control of fractional-order dynamic systems with delay argument, *Journal of Vibration and Control* 24 (12), 2430-2446, 2018.
33. M Hajipour, A Jajarmi, A Malek, D Baleanu, Positivity-preserving sixth-order implicit finite difference weighted essentially non-oscillatory scheme for the nonlinear heat equation, *Applied Mathematics and Computation* 325, 146-158, 2018.
34. A Jajarmi, D Baleanu, Optimal control of nonlinear dynamical systems based on a new parallel eigenvalue decomposition approach, *Optimal Control Applications and Methods* 39 (2), 1071-1083, 2018.
35. M Hajipour, A Jajarmi, D Baleanu, An Efficient Nonstandard Finite Difference Scheme for a Class of Fractional Chaotic Systems, *Journal of Computational and Nonlinear Dynamics* 13 (2), 021013, 2018.
36. M Hajipour, A Jajarmi, Numerical solution of the state-delayed optimal control problems by a fast and accurate finite difference θ -method, *Communications in Nonlinear Science and Numerical Simulation* 55, 265-276, 2018.
37. D Baleanu, A Jajarmi, M Hajipour, A New Formulation of the Fractional Optimal Control Problems Involving Mittag-Leffler Nonsingular Kernel, *Journal of Optimization Theory and Applications* 175 (3), 718-737, 2017.
38. D Baleanu, A Jajarmi, JH Asad, T Błaszczuk, The Motion of a Bead Sliding on a Wire in Fractional Sense, *Acta Physica Polonica A* 131 (6), 1561-1564, 2017.
39. A Jajarmi, M Hajipour, An efficient parallel processing optimal control scheme for a class of nonlinear composite systems, *Acta Mathematica Scientia* 37 (3), 703-721, 2017.
40. A Jajarmi, M Hajipour, D Baleanu, New aspects of the adaptive synchronization and hyperchaos suppression of a financial model, *Chaos, Solitons & Fractals* 99, 285-296, 2017.
41. A Jajarmi, M Hajipour, An Efficient Finite Difference Method for The Time-Delay Optimal Control Problems With Time-Varying Delay, *Asian Journal of Control* 19 (2), 554-563, 2017.
42. E Mohammadzadeh, N Pariz, SK Hosseini-Sani, A Jajarmi, Optimal Control for a Class of Nonlinear Fractional-Order Systems Using an Extended Modal Series Method and Linear Programming Strategy, *Journal of Control* 10 (1), 51-64, 2016. (in Persian)
43. A Jajarmi, M Hajipour, An efficient recursive shooting method for the optimal control of time-varying systems with state time-delay, *Applied Mathematical Modelling* 40 (4), 2756-2769, 2016.
44. A Jajarmi, MD Nayyeri, HS Nik, A novel feedforward-feedback suboptimal control of linear time-delay systems, *Journal of Complexity* 35, 46-62, 2016.
45. A Gholizadeh, HS Nik, A Jajarmi, Analysis and Control of a Three-Dimensional Autonomous Chaotic System, *Applied Mathematics & Information Sciences* 9 (2), 739-747, 2015.

46. SS Sajjadi, N Pariz, A Karimpour, A Jajarmi, An off-line NMPC strategy for continuous-time nonlinear systems using an extended modal series method, *Nonlinear Dynamics* 78 (4), 2651-2674, 2014.
47. S Effati, HS Nik, A Jajarmi, Hyperchaos control of the hyperchaotic Chen system by optimal control design, *Nonlinear Dynamics* 73 (1-2), 499-508, 2013.
48. A Jajarmi, N Pariz, S Effati, AV Kamyad, Infinite horizon optimal control for nonlinear interconnected large-scale dynamical systems with an application to optimal attitude control, *Asian Journal of Control* 14 (5), 1239-1250, 2012.
49. A Jajarmi, N Pariz, AV Kamyad, S Effati, A highly computational efficient method to solve nonlinear optimal control problems, *Scientia Iranica* 19 (3), 759-766, 2012.
50. S Effati, AM Vazir, AV Kamyad, A Jajarmi, A global linearization approach to solve nonlinear nonsmooth constrained programming problems, *Computational & Applied Mathematics* 30 (2), 427-443, 2011.
51. A Jajarmi, N Pariz, S Effati, AV Kamyad, Solving infinite horizon nonlinear optimal control problems using an extended modal series method, *Journal of Zhejiang University SCIENCE C* 12 (8), 667-677, 2011.

Selected Conference Proceedings:

1. A Jajarmi, D Baleanu, O Defterli, A new fractional modelling of the HIV infection by using a nonsingular operator approach, *International Conference on Computational Methods in Applied Sciences, IC²MAS 2019, Istanbul Gelisim University, Istanbul, Turkey, July 12-16, 2019.*
2. A Jajarmi, D Baleanu, An efficient numerical technique to solve state-delayed optimal control problems, *The third International Conference on Computational Mathematics and Engineering Sciences, CMES-2018, Girne, Cyprus, May 4-6, 2018.*
3. A Jajarmi, M Hajipour, D Baleanu, New aspects of the fractional differential equations with Mittag-Leffler nonsingular kernel, *4th International Conference on Pure and Applied Sciences (Renewable Energy), ICPAS2017, Istanbul, Turkey, November 23-25, 2017.*
4. A Jajarmi, D Baleanu, M Hajipour, On the new formulation of fractional optimal control problems, *4th International Conference on Pure and Applied Sciences (Renewable Energy), ICPAS2017, Istanbul, Turkey, November 23-25, 2017.*
5. M Roohparvar, A Jajarmi, Analysis of a new chaotic system with cubic nonlinear term by using piece-wise modal series method, *The 3rd National Conference of New Achievements in Electric, Computer, and Industrial Engineering, Esfarayen, Iran, October 11-12, 2017. (in Persian)*
6. SS Sajjadi, A Jajarmi, N Pariz, A Karimpour, A new off-line switched NMPC for nonlinear systems using extended modal series, *25th Iranian Conference of Electrical Engineering (ICEE), Tehran, Iran, May 2-4, 2017. (in Persian)*
7. SS Sajjadi, A Jajarmi, Designing a robust NMPC for nonlinear control systems in the presence of unknown additive disturbances using extended modal series, *The 10th International Conference of Iranian Operations Research Society, Babolsar, Iran, May 3-5, 2017. (in Persian)*
8. M Hajipour, A Jajarmi, Non-standard Runge-Kutta schemes, *The 6th Seminar on Numerical Analysis and its Applications, Maragheh, Iran, July 2016.*
9. A Jajarmi, M Hajipour, Optimal disturbance rejection with zero steady-state error for nonlinear systems with sinusoidal disturbances, *24th Iranian Conference of Electrical Engineering (ICEE), Shiraz, Iran, May 2016.*
10. SS Sajjadi, N Pariz, A Karimpour, A Jajarmi, Designing an off-line NMPC algorithm by modal series method, *24th Iranian Conference of Electrical Engineering (ICEE), Shiraz, Iran, May 2016. (in Persian)*

11. A Jajarmi, H Ramezanzpour, N Pariz, AV Kamyad, A novel computational approach to solve nonlinear boundary value problems using extended modal series method, 19th Iranian Conference of Electrical Engineering (ICEE), Tehran, Iran, May 2011.
12. A Jajarmi, H Ramezanzpour, A Sargolzaei, P Shafaei, Optimal control of nonlinear systems using the homotopy perturbation method, 2010 International Colloquium on Computing, Communication, Control, and Management (CCCM), Yangzhou, China, August 2010.
13. A Jajarmi, S Bahramnejad, H Ramezanzpour, Modifying the homotopy perturbation method to solve discrete-time nonlinear optimal control problems, 2010 International Conference on Services Science, Management and Engineering (SSME), Tianjin, China, December 2010.
14. A Jajarmi, N Pariz, AV Kamyad, S Effati, A new approach for solving the optimal control problem of nonlinear systems in control-affine form, 2010 International Colloquium on Computing, Communication, Control, and Management (CCCM), Yangzhou, China, August 2010.
15. A Jajarmi, N Pariz, AV Kamyad, S Effati, A novel approach with parallel processing capability to solve optimal control problem of nonlinear large-scale systems, 18th Iranian Conference of Electrical Engineering (ICEE), Isfahan, Iran, May 2010.
16. A Jajarmi, H Ramezanzpour, MD Nayyeri, AV Kamyad, A new approach to solve nonlinear path planning problem via measure theory, IEEE International Multi-topic Conference, Islamabad, Pakistan, December 2009.
17. A Jajarmi, M Gachpazan, AV Kamyad, Open-loop control of nonlinear systems via a sequence of nonlinear programming problems, 17th Iranian Conference of Electrical Engineering (ICEE), Tehran, Iran, May 2009. (in Persian)
18. A Jajarmi, N Pariz, A Karimpour, Sufficient conditions for stabilizability of switched linear systems with suboptimal convergence rate, 2nd International IEEE Conference on Computer, Control, and Communication, Karachi, Pakistan, February 2009.
19. A Jajarmi, A Karimpour, R Shahnazi, M Davarinezhad, Designing a robust controller for high-precision multi-dimensional positioning stage, Second International Congress on Manufacturing Engineering, Tehran, Iran, December 2007.
20. A Jajarmi, HF Marj, R Shahnazi, N Pariz, A novel hybrid structure and criteria in modeling and identification, First joint Congress on Intelligent and Fuzzy Systems, Mashhad, Iran, August 2007.