Assistant Professor
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Qualifications:

- Ph.D. (S.P. Pune University, 2017)
- Post-Doc (IITB, 2018-2020)
- CSIR NET JRF (2010, AIR 24)

Profile:

Dr. Amey S. Deshpande is working as an Assistant Professor at Faculty of Mathematical Sciences, South Asian University, New Delhi, India. Dr. Amey has completed his Ph. D. in September 2017 from S. P. Pune University with thesis entitled “"Non-linear Dynamical Systems of Fractional Order: Theory & Simulations". He has completed his Post-Doc from Indian Institute of Technology Bombay during the period of Jan 2018 - Jan 2020. He has got various awards such as ‘Late Shri Damodar Ganesh Ramdasi Gold Medal’, 'Late Principle Rangler Gopalkrishna Laxman Chandratraya Gold Medal’, CSIR NET JRF, NBHM Post-Doctoral Fellowship. He is currently co-supervising 2 Ph.D. scholars in the area of fractional dynamical systems. He has currently published multiple research articles in SCI/SCOPUS indexed international reputed journals.

Research Interests:

1) Nonlinear Dynamical Systems
2) Fractional Differential Equations

Research Papers Published:

- A. Deshpande and V. Daftardar-Gejji. Local stable manifold theorem for fractional systems. Nonlinear Dynamics, 83(4):24352452, 2016. and A. Deshpande and V. Daftardar-Gejji. Erratum to: Local stable manifold theorem for fractional systems. Nonlinear Dynamics, pages 12, 2017.
- A. Deshpande and V. Daftardar-Gejji. Chaos in discrete fractional difference equations. Pramana, 87(4):49, 2016.
- A. S. Deshpande, V. Daftardar-Gejji, and Y. V. Sukale. On Hopf bifurcation in fractional dynamical systems. Chaos, Solitons and Fractals, 98:189-198, 2017.

- A. S. Deshpande and V. Daftardar-Gejji. On disappearance of chaos in fractional systems. Chaos, Solitons and Fractals, 102:119-126, 2017. Future Directions in Fractional Calculus Research and Applications.
- A. Deshpande, V. Daftardar-Gejji, P. Vellaisamy. Analysis of intersections of trajectories of systems of linear fractional differential equations, Chaos, 29(1):013113, 2019.
- A. Deshpande and V. Daftardar-Gejji. Chaotic dynamics of fractional Vallis system for El-Nino. Frac. Calc. Appl. Anal., 22(3):825-842, 2019.
- Pakhare, S.S., Daftardar-Gejji, V., Badwaik, D.S., Deshpande, A., Gade, P.M. Emergence of order in dynamical phases in coupled fractional gauss map. Chaos, solitons and Fractals, 135: 109770, 2020.
- Y. Mahatekar and A. S. Deshpande. A generalized NPCM for solving multiterm fractional differential equations. International Journal of Applied and Computational Mathematics, 8(3): 1-17, 2022.
- Y. Mahatekar and A. S. Deshpande. Analysis of natural Daftardar-Jafari method for fractional delay differential equations. International Journal of Applied and Computational Mathematics, 10(3):117, 2024.
- Deshpande, Amey S., and Varsha Daftardar-Gejji. Enhancing the security of image communication with a new hyper-chaotic system. Physica Scripta 99.11 (2024): 115234.
- Jadhav, Rajashree, Deshpande, Amey S., Daftardar-Gejji, Varsha. Analysis of the Fractional Proto Bhalekar-Gejji System. Computational & Applied Mathematics, 44(7), 2025.
- Y. Mahatekar and A. S. Deshpande. A novel method for solving Riemann-Liouville fractional differential equations. Mathematical Methods in the Applied Sciences, 2025.

Awards & Honors:

1) ‘Late Shri Damodar Ganesh Ramdasi Gold Medal’ for standing first in M.Sc. program batch 2011 at University of Pune.
2) 'Late Principle Rangler Gopalkrishna Laxman Chandratraya Gold Medal’ for standing first in M.Sc. Mathematics course at University of Pune in the Year 2011.
3) CSIR NET Junior Research Fellowship for Ph.D.
4) NBHM Post-Doctoral Fellowship