Department of Mathematics
Faculty of Science / University of Peradeniya

Ms. Chamalka Dharmasiri

BSc Hons (KLN)

Lecturer (Probationary)

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About Me

I am currently a Lecturer in the Department of Mathematics at the University of Peradeniya. I obtained my B.Sc. (Hons) Degree in Mathematics from the University of Kelaniya, Sri Lanka, and I am currently pursuing an M.Phil. in Mathematics. My research interests include Numerical Analysis, computational mathematics, mathematical modelling, chaos theory, and differential equations, with a particular focus on nonlinear dynamical systems, including the analysis of Lyapunov exponents, bifurcations, and chaotic and hyperchaotic behavior.

Higher Education Qualifications

Nothing to show under this subheading !!!

Awards, Scholarships, Memberships & Fellowships

- Best Presenter Award - International Conference on Applied and Pure Sciences, 2025
- Finalist, NIFS Three Minute Thesis (3MT) Competition 2025, with the presentation titled “Dynamic Analysis of a 4D Hyper-Chaotic Financial System with a Self-Reinforcing Feedback Loop in Market Sentiment.”
- Dean's List (2020/ 2021) - Faculty of Science. University of Kelaniya
- Dean's List (2019/ 2020) - Faculty of Science, University of Kelaniya
- President, Mathematics Students' Society (2021 - 2022), University of Kelaniya, Sri Lanka

Positions Held

- Lecturer (Probationary), Department of Mathematics, University of Peradeniya, Sri Lanka- (2025 October - Present)
- Research Assistant, Department of mathematics, University of Kelaniya, Sri Lanka- (2025 April - 2025 October)
- Temporary Demonstrator, Department of Mathematics, University of Kelaniya, Sri Lanka- (2023 June -2025 April)
- Co-Chair, Science in Nature Photography Competition and Exhibition , Faculty of Science, University of Kelaniya, Sri Lanka- (2025)

My Teachings

MAT3073: Numerical Analysis II

Research Interests (Research Fields/ Projects)

Numerical Analysis
Mathematical Modelling
Dynamical Analysis
Chaos Theory

Ongoing Research and Projects

Neural Fuzzy Controller for Stabilizing Hyper-Chaotic Financial Systems with Market Confidence

This research project begins with a comprehensive dynamical analysis of a hyper-chaotic financial system influenced by market confidence, employing Lyapunov exponents, time series analysis, phase portraits, and bifurcation diagrams to characterize its complex behavior. Building on these insights, the second phase develops a neural–fuzzy control framework to stabilize the system, where the integration of neural networks and fuzzy logic enables adaptive handling of nonlinearities and effective suppression of chaotic and hyperchaotic dynamics.

Key Publications

Dharmasiri, C. H., & Perera, B. B. U. P. (2025). Dynamic Analysis of a Chaotic Financial System with Reflexive Market Sentiment. Dynamics, 5(4), 47. doi:10.3390/dynamics5040047 - (2025)

Neural Fuzzy Controller for Stabilizing Hyper-Chaotic Financial Systems with Market Confidence

Conferences

Nothing to show under this subheading !!!

My Publications

Please goto the website.

https://sci.pdn.ac.lk/maths/staff/Chamalka-Dharmasiri

