S.V. Manivelan

Tamil Nadu, India manivelan.saminathan@gmail.com +91-8754010657

Portfolio Website manivelan-s-v Manivelan-sv

To deepen my expertise as a research scholar in *Nonlinear Dynamics* and *Chaos*, with a focus on understanding and predicting extreme events in complex systems. I aim to strengthen my theoretical foundation and computational skills, particularly in Extreme Value Theory, machine learning, and complex network analysis, to advance my research in dynamical systems.

Research Interests

- Statistical properties and dynamics of Extreme Events in nonlinear systems.
- Machine learning techniques for predictive modeling.
- Dynamics and characterization of complex networks.
- Computational Modeling and Simulation

Education

Ph.D. in Physics
2023 - present

M. R. Government Arts College (Affiliated to Bharathidasan University), Mannargudi, Tamil Nadu.

- **Tentative Title:** Dynamical and Statistical Characteristics Study of Extreme Events in Nonlinear Systems.
- **Coursework:** Nonlinear Dynamics, Nonlinear Circuits and Extreme Events, Research Methodology, Research and Publication Ethics.
- **CGPA:** 9.57

M.Sc. in Physics
2021-2023

St.Joseph's College (Autonomous), Affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu.

- **Project Title:** Study On Extreme Events In Forced Liénard Dynamical System.
- **CGPA:** 8.13

B.Sc. in Physics
2018-2021

St.Joseph's College (Autonomous), Affiliated to Bharathidasan University, Tiruchirappalli, Tamil Nadu.

- **Project Title:** Chua's Circuit And Its Applications In Nonlinear Dynamics.
- **CGPA:** 8.16

Publications

Self-feedback delay induces extreme events in the theoretical Brusselator system
S.V. Manivelan, S.Sabarathinam, K.Thamilmaran, I.Manimehan.
Accepted in **Physical Review E**

Investigation of transient extreme events in a mutually coupled star network of theoretical Brusselator system
S.V. Manivelan, S.Sabarathinam, K.Thamilmaran, I.Manimehan.
Chaos 34(9), Sep 2024, 091102

Dynamical instabilities cause extreme events in a theoretical Brusselator model
S.V. Manivelan, S.Sabarathinam, K.Thamilmaran, I.Manimehan.
Chaos, Solitons & Fractals 180, Mar 2024, 114582

Oral Presentation

- **Title:** Self-feedback delay induces extreme events in the theoretical Brusselator system
  Event: Conference On Nonlinear Systems And Dynamics (Cnsd 2025)
  Organizers: Bharathidasan University, Tiruchirappalli
- **Title:** Study of extreme events and multistability in memristor based Wilson neuron model.
  Event: 7^{th} International Conference on Complex Dynamical Systems $\&$ Applications (2024).
  Organizers: Physics $\&$ Applied Mathematics Unit, Indian Statistical Institute, Kolkata.
- **Title:** Dynamical instabilities cause extreme events in a theoretical Brusselator model.
  Event: NULL-MUSS Complex System Seminar Series (Online),
  Organizers: Laboratory of Complex Systems Modelling and Control, HSE University, Moscow, Russia.

Skills

Programing: Julia, C, Python, Fortran, MATLAB, HTML, and JavaScript

Tools $\&$ Software: Arduino, Git, Linux, TensorFlow, OriginLab, Proteus Design Suite, and LaTeX

Language: Tamil (native), and English (fluent)

Services

Science and Humanities for People's Development, Student Volunteer
June 2018 – May 2023

- Assisted in health-focused initiatives, including community health education, wellness workshops, and support for local healthcare programs.
- Aided in organizing events and outreach programs to promote public health awareness.

References

Dr. I. Manimehan
Research Supervisor,
Assistant professor of Physics,
M. R. Government Arts College,
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Dr. K. Thamilmaran
Sr. scientist,
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