

Curriculum Vitae - Saptarshi Ghosh

Personal Information

Address Y55 G 54, Institute of Neuroinformatics
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Google Scholar <https://scholar.google.co.in/citations?user=-efQoA0AAAAJ&hl=en>

Education

Ph.D. in Network Science,
Indian Institute of Technology Indore, M.P., India Dec 2014 - Jan 2020
Supervisor: Prof. Sarika Jalan
Defence Date: Jan. 8, 2020

Master of Science in Physics,
Indian Institute of Technology Kanpur, U.P., India July 2012 - May 2014
Supervisor: Prof. H.C. Verma

Bachelor of Science,
Asutosh College, University of Calcutta, W.B., India Aug 2009 - June 2014

Employment History

Postdoctoral Researcher, Institute of Neuroinformatics
(Prof. Giacomo Indiveri) Jan 2022 - Present
University of Zurich & ETH Zurich, Zurich, Switzerland

Postdoctoral Researcher, Kavli Institute for Systems Neuroscience
(Prof. Yaseer Roudi) Feb 2020 - Dec 2021
Norwegian University of Science and Technology, Trondheim, Norway

Teaching Activities

Teaching Assistant, Physics -I: Modern Physics (PH 105),
Indian Institute of Technology Indore, M.P., India Aug – Nov 2016

Teaching Assistant, Physics Lab (PH 156),
Indian Institute of Technology Indore, M.P., India Jan – May 2017

Teaching Assistant, Theory of Complex Systems (Elective),
Indian Institute of Technology Indore, M.P., India Jan – May 2018

Supervision of Junior Researchers

C Aparna, Summer Student, part of Integrated M.Sc. Int. MSc Physics, UM-DAE CEBS, Mumbai, India	May-July 2019
Bibhabasu Patra, part of Integrated M.Sc. Int. MSc Physics, NISER Bhubaneswar, Odisha, India	May 2016 and December 2017
Naveen Maindola, MS, Indian Institute of Technology Indore, MP, India	Aug 2018 - May 2019
Pramodini Mallik MS, Indian Institute of Technology Indore, MP, India	Aug 2018- May 2019
Niraj Kushwaha MS, Indian Institute of Technology Indore, MP, India	Aug 2019 – Dec 2019

Reviewing Activities

Journal Reviews: European Physical Journal B, Chaos, Solitons & Fractals, Physica A, Chaos, International Journal of Modern Physics C

Organization of Conferences

Global Initiative of Academic Networks (GIAN) workshop on “Network Science and Multi-Agent Systems” Indian Institute of Technology Indore MP India	June 2016
Global Initiative of Academic Networks (GIAN) workshop on “Biomathematics: from gene expression to bone mechanics”, Indian Institute of Technology Indore Indore India	August 2016
Global Initiative of Academic Networks (GIAN) workshop on “Statistics in Systems Biology and Programming in R” Indian Institute of Technology Indore MP India	August 2016

Prizes, Awards, Fellowships

INSPIRE Fellowship, Department of Science and Technology, Govt. of India	Jan 2015 – Dec 2019
INSPIRE Scholarship, Department of Science and Technology, Govt. of India	Aug 2009 – May 2014
MCM Scholarship, Govt. of West Bengal India	Aug 2009 – June 2014

Personal Skills

Julia, Python, Latex, MATLAB, Octave, Jupyter/vs code, Office/G-Suite, Linux coding (proficient), C/C++, git, Github, Cytoscape, Inkscape, Networkx, Xpp-Auto (competent), Adobe Suite, Openstack VM, Gephi, R (novice)
Languages: Bengali, English, Hindi

Career Breaks : N/A

Publications in peer-reviewed scientific journals

(*** denotes the five most important contributions)

Ph.D. Thesis Work

- ***S Ghosh, L Schülen, AD Kachhvah, A Zakharova and S Jalan *Taming chimeras in networks through multiplexing delays*, EPL (Europhysics Letters) 127 (3), 30002 2019
Link: <http://doi.org/10.1209/0295-5075/127/30002>
- ***S Ghosh and S Jalan *Engineering chimera patterns in networks using heterogeneous delays*, Chaos (Fast Track) 28, 071103 2018
Link: <http://doi.org/10.1063/1.5042133>
- ***S Ghosh, A Zakharova and S Jalan *Non-identical multiplexing promotes chimera states*, Chaos, Solitons & Fractals, 106, 56-60 2018
Link: <http://doi.org/10.1016/j.chaos.2017.11.010>
- S Jalan, S Ghosh, and B Patra *Is repulsion good for the health of chimeras?* Chaos (Fast Track) 27 (10), 101104 2017
Link: <http://doi.org/10.1063/1.5005576>
- ***S Ghosh, A Kumar, A Zakharova, and S Jalan *Birth and death of chimera: Interplay of delay and multiplexing*, EPL (Europhysics Letters) 115 (6), 60005 2016
Link: <http://doi.org/10.1209/0295-5075/115/60005>
- S Ghosh, S. K. Dwivedi, MV Ivanchenko, Sarika Jalan *Interplay of inhibition and multiplexing: Largest eigenvalue statistics*, EPL (Europhysics Letters) 115 (1), 10001 2016
Link: <http://doi.org/10.1209/0295-5075/115/10001>
- ***S. Ghosh, S. Jalan *Emergence of Chimera in Multiplex Network*, International Journal of Bifurcation and Chaos 26 (07), 1650120 2016
Link: <http://doi.org/10.1142/S0218127416501200>

Collaborative Work

- N Kushwaha, NK Mendola, S Ghosh, AD Kachhvah and S Jalan, *Machine Learning Assisted Chimera and Solitary States in Networks* Frontiers in Physics, 9: 147. 2021. 2021
Link: <http://doi.org/10.3389/fphy.2021.513969>
- MA Ganaie, S Ghosh, N Mendola, M Tanveer and S Jalan *Identification of chimera using machine learning*, Chaos 30 (6), 063128 2020
Link: <http://doi.org/10.1063/1.5143285>
- L Schülen, S Ghosh, AD Kachhvah, A Zakharova and S Jalan *Delay engineered solitary states in complex networks*, Chaos, Solitons & Fractals 128, 290-296 2019
Link: <http://doi.org/10.1016/j.chaos.2019.07.046>
- J Sawicki, S Ghosh, S Jalan and A Zakharova *Chimeras in multiplex networks: interplay of inter-and intra-layer delays*, Frontiers in Applied Mathematics and Statistics 5, 19 2019
Link: <http://doi.org/10.3389/fams.2019.00019>
- A Singh, S Ghosh, S Jalan and J Kurths (2015) *Synchronization in delayed multiplex networks*, EPL (Europhysics Letters) 111 (3), 30010 2015
Link: <http://doi.org/10.1209/0295-5075/111/30010>

Peer-reviewed books/monographs

S Ghosh *Chimera state in multiplex networks*,
Indian Institute of Technology Indore (PhD Thesis)
Link: <http://dspace.iiti.ac.in:8080/jspui/handle/123456789/2013>
<https://tinyurl.com/yh9hh648> 2020

Peer-reviewed conference proceedings: N/A

Contributions to books: N/A

Patents and licenses: N/A

Contributions to conferences (oral presentation or poster)

Dynamic Days Europe, Rostock, Germany (Oral Presentation)	2019
Seminar Talk at Kavli-NTNU, Trondheim, Norway (Oral Presentation)	2019
Seminar Talk at ICS-CAS, Prague, Czech Republic (Oral Presentation)	2019
Annual INSPIRE meet at New Delhi, India (Poster Presentation)	2019
Seminar Talk at TU Berlin, Berlin, Germany (Oral Presentation)	2018
Conference on Non-linear Systems and Dynamics, JNU, New Delhi (Oral Presentation)	2018
Conference on Non-linear Systems and Dynamics, IISER Mohali, Punjab (Poster Presentation)	2015

Other artefacts with documented use:

Participant in Neuromatch Academy Group Project “Neural integration of reward information in subsequent decisions”
Link: <https://github.com/smhall97/backtothefuture>
Link: <https://www.youtube.com/watch?v=D00ZSFyFbrE> 2020

Submitted but not yet accepted publications/not yet published works

S Ghosh and Y Roudi
Relevance of representations in neural recordings from CA1 & SUB regions
S Ghosh, BR Bučková, ID Zerbe and J Hlinka
Exploring Chimera state in Epileptic Seizures

Unpublished work

S Ghosh, H.C.Verma *Nano radiation detector: A possibility Making Physically Useful Nanostructures With Focused Ion Beam: A study of Nano Gaps* arXiv.1904.09774
Link: <https://doi.org/10.48550/arXiv.1904.09774> 2014