

CONTACT INFORMATION Complexity Science Hub Vienna
Josefstaedter Strasse 39 , 1080 Vienna, Austria
Phone: (+43)67763742441
E-mail: abhiphyitg@gmail.com

PERSONAL DETAILS Date of Birth : 05 July, 1985
Place of Birth : Midnapore (W), West Bengal, India
Gender : Male
Marital Status: Married
Nationality : Indian
Passport No. : Z4811202
Languages (R & W) : English, Bengali (M.T.), Hindi

RESEARCH INTERESTS Complex Networks, Econophysics, Self-organized Critical Phenomena, Percolation, Collective Motion.

EMPLOYMENT **Complexity Science Hub**, Vienna, Austria
&
International Institute for Applied Systems Analysis (IIASA), Laxenburg, Austria
Advanced Systems Analysis
Post Doctoral Fellow, March 2020 - Present.

- Supervisor: Professor Stefan Thurner

University of Hyogo, Kobe, Japan
Graduate School of Simulation Studies
Post Doctoral Fellow, November 2016 - February 2020.

- Supervisor: Professor Yoshi Fujiwara

Institute of Mathematical Sciences, Chennai, India
Theoretical Physics
Post Doctoral Fellow, Physics, October 2014 - October 2016.

- Supervisor: Professor Sitabhra Sinha

EDUCATION **Satyendra Nath Bose National Centre for Basic Sciences**, Saltlake, Kolkata, India
Department of Theoretical Sciences
Ph.D., Physics, August 2008 (Thesis Submitted, July 2014 & Degree Awarded, August 2015)

- Thesis Topic: "Some Studies of Complex Networks in Multidisciplinary Fields"
- Supervisor: Professor Subhrangshu Sekhar Manna

Indian Institute of Technology, Guwahati, India
Department of Physics
M.Sc., Physics, May, 2008
Marks: Cumulative Percentile Index (CPI) 8.14 in 10 point scale

- Project Topic: "Formation of Turing Patterns on Fractal Lattices"
- Supervisor: Professor Sitangshu Bikas Santra

Maulana Azad College, Calcutta University, Kolkata, India
Department of Physics
B.Sc., Physics, 2006
Result: 1st Class. Marks: 62.25%

Higher Secondary Examination, West Bengal Council of Higher Secondary Education, India

2003

Result: 1st Division, Marks: 79.7%

Secondary Examination, West Bengal Board of Secondary Education, India

2001

Result: 1st Division, Marks: 79.5%

SCHOLASTIC
ACHIEVEMENTS

National Eligibility Test (NET)-December/2008: Qualified for Junior Research Fellowship

Joint Entrance Screening Test (JEST)-2008: All India Rank- 94 (out of 4000 students)

PUBLICATIONS

18. Identification of key companies for international profit shifting in the global ownership network, T Nakamoto, **A Chakraborty** and Y Ikeda, **Applied Network Science** **4, 58, (2019)**

17. The emergence of properties of the Japanese production network: How do listed firms choose their partners? H Krichene, Y Fujiwara, **A Chakraborty**, Y Arata, H Inoue and M Terai, **Social Networks** **59, 1 (2019)**

16. Exponential random graph models for the Japanese bipartite network of banks and firms, **A Chakraborty**, H Krichene, H Inoue and Y Fujiwara, **Journal of Computational Social Science** **2, 3, (2019)**

15. Tie-formation process within the communities of the Japanese production network: application of an exponential random graph model, H Krichene, **A Chakraborty**, Y Fujiwara, H Inoue and M Terai, **Applied Network Science** **4(1), 5, (2019)**

14. Characterization of the community structure in a large-scale production network in Japan, **A Chakraborty**, H Krichene, H Inoue and Y Fujiwara, **Physica A** **513, 210 (2019)**

13. Hierarchical Communities in the Walnut Structure of the Japanese Production Network, **A Chakraborty**, Y Kichikawa, T Iino, H Iyetomi, H Inoue, Y Fujiwara and H Aoyama, **PloS one** **13(8), e0202739 (2018)**

12. Deviations from universality in the fluctuation behavior of a heterogeneous complex system reveal intrinsic properties of components: The case of the international currency market, **A Chakraborty**, S Easwaran and S Sinha, **Physica A** **509, 599 (2018)**

11. Shock Propagation Through Customer-Supplier Relationships: An Application of the Stochastic Actor-Oriented Model, Y Arata, **A Chakraborty**, Y Fujiwara, H Inoue, H Krichene and M Terai, **International Workshop on Complex Networks and their Applications** **1100 (2017)**

10. Business cycles' correlation and systemic risk of the Japanese supplier-customer network, H Krichene, **A Chakraborty**, H Inoue and Y Fujiwara, **PloS one** **12(10), e0186467 (2017)**

9. Jamming in a lattice model of stochastically interacting agents with a field of view, SN Menon, T Bagarti and **A Chakraborty**, **EPL** **117, 50007 (2017)**

8. Network similarity and statistical analysis of earthquake seismic data, K Deyasi, **A Chakraborty** and A Banerjee, **Physica A** **481, 224 (2017)**

7. Spontaneous fluctuations in a zero-noise model of flocking, **A Chakraborty** and K Bhattacharya,

EPL 116, 48001 (2016)

6. Weighted network analysis of earthquake seismic data, **A Chakraborty**, G Mukherjee and S S Manna, **Physica A 433, 336 (2015)**
5. Space-filling percolation, **A Chakraborty** and S S Manna, **Phys. Rev. E 89, 032103 (2014)**
4. Disease spreading model with partial isolation, **A Chakraborty** and S S Manna, **Fractals 21, 1350015 (2013)**
3. Conservative self-organized extremal model for wealth distribution, **A Chakraborty**, G Mukherjee and S S Manna, **Fractals, 20, 163 (2012)**
2. Weighted trade network in a model of preferential bipartite transactions, **A Chakraborty** and S S Manna, **Phys. Rev. E 81, 016111 (2010)**
1. Formation of turing patterns on fractal substrate, S B Santra, **A Chakraborty** and S Sinha, **Proceedings of the 52nd DAE solid state physics symposium, 197 (2007)**

MANUSCRIPTS IN
PREPARATION

1. A model for indirect losses of negatives shocks in production and finance, H Krichene, H Inoue, T Isogai and **A chakraborty**, <http://dx.doi.org/10.2139/ssrn.3343949>
2. Economic complexity of prefectures in Japan, **A chakraborty**, H Inoue and Y Fujiwara, **arXiv:2002.05785**
3. Bow-tie structure and community identification of global supply chain network, **A chakraborty**, and Y Ykeda, **arXiv:2003.02343**

REFEREE ACTIVITY Applied Network Science; Evolutionary and Institutional Economics Review

CONFERENCES
PARTICIPATED AND
ATTENDED

- Presented a poster and oral talk in 52nd DAE Solid State Physics Symposium at Mysore University, Bangalore, India (2007)
- Presented an oral talk in Dynamics on Network at IISER-Pune, Pune, India (2009)
- Presented a poster in STATPHYS-VII at SINP, Kolkata, India (2010)
- Presented a poster in International conference on Statistical Physics and Nonlinear Dynamics at SNBNCBS, Kolkata, India (2012)
- Presented a poster in International Conference on Networks in biology, social science and engineering, IISC, Bangalore, India (2012)
- Participated in Fracture: From Micro-Scale Processes to Macro-Scale Response, IMSC, Chennai, India (2015)
- Participated in Short-term Course and Workshop on Machine Learning and Complex Networks, IIT, Kharagpur, India (2015)
- Presented a poster in Indo-US Workshop on Time Series Analysis, IISER, Pune, India (2015)
- Presented a poster in International workshop on Econophysics & Sociophysics, JNU & DU, Delhi, India (2015)
- Participated in the ICTS-Northeastern Discussion Meeting on Games, Epidemics and Behavior, ICTS, Bangalore, India (2016)
- Presented an oral talk in Asia-Pacific Econophysics Conference at University of Tokyo, Tokyo, Japan (2016)
- Presented an oral talk in Evolutionary Economics Conference at Kyoto University, Kyoto, Japan, (2017)
- Presented an oral talk in Complex network conference at Lyon, France (2017)
- Presented an oral talk in Economic physics: fusion with new areas, Kyoto University, Kyoto, Japan

(2017)

Participated in RIKEN International HPC Summer School, Kobe, Japan (2018)

Presented an oral talk in WEHIA conference at the International Christian University, Tokyo, Japan (2018)

Participated in Network Science Workshop at Kobe University, Kobe, Japan (2018)

Presented an oral talk in CCS conference at Aristotle University of Thessaloniki, Thessaloniki, Greece (2018)

Presented an oral talk in PRIMA conference at AIST Tokyo Waterfront, Tokyo, Japan (2018)

Participated in CCSS School on Computational Social Science at Kobe University, Kobe, Japan (2019)

Presented an oral talk in Workshop on Dynamics in Finance and Economy on economic networks at RIETI, Tokyo, Japan (2019)

Presented two posters in Complex network conference at Lisbon, Portugal (2019)

COMPUTER SKILLS

- Languages: MATLAB, R, Fortran 77, 90 & C.
- Data Analysis techniques: Time series analysis, Principle component analysis, Independent component analysis, Recurrence network, Visibility graph.
- Algorithms: Cluster counting algorithm (The Hoshen-Kopelman algorithm), Grassberger algorithm to find the global minimum, Algorithm to generate networks, Hierarchical clustering, Community detection, Velocity-Verlet algorithm to solve differential equation.
- Operating Systems: Unix/Linux, Windows.

Date: April 9, 2020