Jaideep Joshi

Research Scholar
International Institute for Applied Systems Analysis
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EDUCATION

2018	**PhD** in 'Spatial and Coevolutionary Dynamics of Cooperation' Supervisor: Vishwesha Guttal Centre for Ecological Sciences, Indian Institute of Science, Bangalore, India
2011	**Bachelor of Technology** (with Honours) in Electrical Engineering, with Minor in Environmental Science Indian Institute of Technology Bombay, Mumbai, India

CURRENT POSITION

01/08/2021 –	**Research Scholar,** International Institute for Applied Systems Analysis, Laxenburg, Austria.

PREVIOUS POSITIONS

01/08/2019 – 31/07/2021	**Marie Skłodowska-Curie Individual Fellow**, International Institute for Applied Systems Analysis, Laxenburg, Austria.
01/02/2018 – 15/05/2019	**Research Associate I**, Divecha Centre for Climate Change, Indian Institute of Science, Bangalore, India.
24/05/2017 – 31/01/2018	**IISc Research Associate**, Centre for Ecological Sciences, Indian Institute of Science, Bangalore, India.
01/02/2012 – 31/07/2012	**Project Assistant**, Centre for Ecological Sciences, Indian Institute of Science, Bangalore, India.
30/06/2011 – 31/12/2011	**Senior Executive**, Ecofirst Services Pvt. Ltd., Mumbai, India.
12/05/2010 – 23/07/2010	**Intern**, IBM India Pvt. Ltd., Bangalore, India

FELLOWSHIPS AND AWARDS

08/2019 – 07/2021	**Marie Skłodowska-Curie Actions Individual Fellowship** from the European Commission (EUR 186,167 for two years), with an evaluation score **5.0/5.0**.
06/2015 – 08/2015	**Young Scientists Summer Programme (YSSP) Fellowship** at IIASA, Austria, funded by TIFAC, Government of India (~EUR 5000 for 3 months)
2010, '11	**Undergraduate Research Awards** I and II, Indian Institute of Technology Bombay

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2021	**1 PhD student** (co-supervised for 3 months during the YSSP program), IIASA, Austria
2017-18	**3 Project assistants** for 1 year each (in India, project assistants are students who have completed their bachelors or masters degrees and work on research projects)

TEACHING ACTIVITIES

2013, '14	**Teaching assistant** for a course on Mathematical Ecology, Indian Institute of Science (two times).

ORGANISATION OF SCIENTIFIC MEETINGS

Aug 2018	Co-organised a **Future Earth workshop** on "Data and tools for climate resilience planning", with participants from the USA, Sri Lanka, Nepal, Bhutan, Bangladesh, and Myanmar
2013, '14, '15	Volunteered in the organization of the **Students Conference on Conservation Science (Bangalore)**

INSTITUTIONAL RESPONSIBILITIES AND SCIENTIFIC LEADERSHIP

2017 – 2019	**Helped coordinate** the work of seven PIs involved in the 'Forests and Biodiversity' Chapter of India's 3rd National Communication to the UNFCCC
2013 – 2014	**Served as Secretary** of the Ecology Students Society, Indian Institute of Science, Bangalore, India. Role: organization of departmental events, workshops, and invited seminars.
2009 – 2010	**Headed** the Attitude determination and controls subsystem, micro-satellite project 'Pratham', Indian Institute of Technology Bombay.

REVIEWING ACTIVITIES

2014 –	Reviewer for Nature Plants, New Phytologist, Tropical Ecology, Current Science.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES (IF APPLICABLE)

2020 –	Member, European Geosciences Union
2014	Member, Society for the Study of Evolution (SSE)

MAJOR INTERNATIONAL COLLABORATIONS

Amazon-FACE	Ongoing collaboration with Dr David Lapola, Universidade Estadual de Campinas, Brazil, PI for the Amazon-FACE project. We are contributing predictions of productivity and diversity under ambient and elevated CO2 for the Model Intercomparison Project (MIP) within Amazon-FACE.
LEMON-TREE	Ongoing collaboration with Prof. Sandy Harrison, University of Reading, UK, and Prof. Iain Colin Prentice, Imperial College London, UK. I am contributing hydraulically explicit optimality-based models of photosynthesis and transpiration.
REALM	Ongoing collaboration with Prof. Iain Colin Prentice, Imperial College London, UK. I am contributing optimality-based models of photosynthesis, xylem hydraulics, and leaf area index.

PUBLICATIONS

1. **Joshi, J.**, Stocker, B. D., Hofhansl, F., Zhou, S., Dieckmann, U., & Prentice, I. C. (2020). Towards a unified theory of plant photosynthesis and hydraulics. BioRxiv, 2020.12.17.423132.

2. **Joshi, J.**, & Sukumar, R. (2021). Improving prediction and assessment of global fires using multilayer neural networks. Scientific Reports, 11(1), 3295. https://doi.org/10.1038/s41598-021-81233-4.

3. Harrison, S. P., Prentice, I. C., Bloomfield K. J., Dong, N., Forkel, M., Forrest, M., Ningthoujam, R. K., Pellegrini, A., Shen, Y., Baudena, M., Cardoso, A. W., Huss, J. C., **Joshi, J.**, Oliveras, I., Pausas, J. G., Simpson, K. J. (2021) Understanding and modelling wildfire regimes: an ecological perspective. Accepted for publication in Environmental Research Letters, pending minor revisions. ***Contribution****: contributed text explaining the resistance-resilience tradeoff axis and related plant strategies.*

4. Harrison, S. P., Cramer, W., Franklin, O., Prentice, I. C., Wang, H., Brännström, Å., de Boer, H., Dieckmann, U., **Joshi, J.**, Keenan, T. F., Lavergne, A., Manzoni, S., Mengoli, G., Morfopoulos, C., Peñuelas, J., Pietsch, S., Rebel, K. T., Ryu, Y., Smith, N. G., Stocker, B. D., Wright, I. J. (2021). Eco-evolutionary optimality as a means to improve vegetation and land-surface models. New Phytologist, 231(6), 2125–2141. ***Contribution****: contributed text explaining the use of eco-evolutionary principles beyond the leaf level, in the context of evolutionary dynamics and frequency dependent selection.*

5. **Joshi, J.**, Brännström, Å., & Dieckmann, U. (2020) The emergence of social inequality in the spatial harvesting of ecological public goods. PLoS computational biology, 16(1), e1007483.

6. **Joshi, J.**, & Guttal, V. (2018). Demographic noise and cost of greenbeard can facilitate greenbeard cooperation. Evolution 72 (12), 2595-2607.

7. **Joshi, J.**, Couzin, I. D., Levin, S. A., & Guttal, V. (2017). Mobility can promote the evolution of cooperation via emergent self-assortment dynamics. PLOS Computational Biology, 13(9), p.e1005732.

8. Chaturvedi, R. K., Kulkarni, A., Karyakarte, Y., **Joshi, J.**, & Bala, G. (2014). Glacial mass balance changes in the Karakoram and Himalaya based on CMIP5 multi-model climate projections. Climatic Change, 123(2), 315-328. ***Contribution****: Provided multi-model climate change projections for the study area.*

9. Bala, G., **Joshi, J.**, Chaturvedi, R. K., Gangamani, H. V., Hashimoto, H., & Nemani, R. (2013). Trends and variability of AVHRR-derived NPP in India. Remote Sensing, 5(2), 810-829. ***Contribution****: Assembled data and performed the analysis.*

10. Chaturvedi, R. K., **Joshi, J.**, Jayaraman, M., Bala, G., & Ravindranath, N. H. (2012). Multi-model climate change projections for India under representative concentration pathways. Current Science, 103(7), 791-802. ***Contribution****: Assembled data and performed the analysis.*

11. Kulakarnī, T., & **Joshi, J.** (2013). The Language of Logic: Navyanyāya Perspectives. Manipal University Press.

12. Mulay, S. S., **Joshi, J.**, Chati, Y. S., Unhelkar, V. V., Bandyopadhyay, S., Tamaskar, S., Bommanahal, M., Talnikar, C., Kumar, A. & Hablani, H. B., (2012). Attitude determination and control of *Pratham*, Indian Institute of Technology Bombay's first student satellite. Advances in the Astronautical Sciences, 145, 1509-1528. ***Contribution****: Designed the control system and supervised the group.*

Citations: 415

Google Scholar: https://bit.ly/2ULN456