

PERSONAL INFORMATION



Dr. Arun Prasad Kumar

Department of Geography, School of Earth Sciences, Central University of Tamil Nadu, Neelakudi Campus, Thiruvavur 610005, Tamil Nadu, INDIA

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Sex Male | Date of Birth 30/12/1987 | Nationality India

My research work involves the application of earth observation data, geoinformatics and machine learning / deep learning techniques in interdisciplinary research for solving research problems related to landscape processes. Currently, I am focusing on landscape dynamics of coastal wetlands and associated coastal landforms and its implications on environment and socio-economic aspects. Further, I focus on diverse research areas such as climate change, invasive species, disaster risk reduction, microplastics pollution, and spatial epidemiology.

RESEARCH STATEMENT

WORK EXPERIENCE

09 / 03 / 2020 – present

Assistant Professor

Department of Geography, School of Earth Sciences, Central University of Tamil Nadu, Thiruvavur 610005, India

01 / 07 / 2019 – 09 / 03 / 2020

Guest Faculty

Department of Geography, School of Earth Sciences, Central University of Tamil Nadu, Thiruvavur 610005, India

29 / 06 / 2018 – 21 / 12 / 2018

&

16 / 01 / 2019 – 14 / 05 / 2019

Assistant Professor (on Contract)

Department of Geography, School of Earth Sciences, Central University of Tamil Nadu, Thiruvavur 610005, India

01 / 03 / 2017 – 31 / 05 / 2018

Guest Scientist / Postdoctoral Researcher

Coasts and River Basins Team, Land Surface Department (LAX), German Remote Sensing Data Centre (DFD), German Aerospace Centre (DLR) Oberpfaffenhofen, Wessling 82234, Germany

24 / 09 / 2010 – 02 / 02 / 2010

Project Fellow

Resource Analysis Division, National Centre for Earth Science Studies (Formerly CESS), Thiruvananthapuram, Kerala, India

EDUCATION AND TRAINING

03 / 2017 – 05 / 2018

International Climate Protection Fellowship (2016-17) from Alexander von Humboldt Foundation, Germany

Coasts and River Basins Team, Land Surface Department (LAX), German Remote Sensing Data Centre (DFD), German Aerospace Centre (DLR) Oberpfaffenhofen, Wessling 82234, Germany

- The postdoctoral research was funded through *International Climate Initiative* (IKI) programme of Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Government of Germany.
- Project Title: Landscape Assessment and Ecological Monitoring of Selected Wetland Ecosystems in India using Time Series Analysis of Multi-temporal High Resolution Optical and Microwave Remote Sensing Data

02 / 2011 – 04 / 2016

Ph.D.

Indian Institute of Space Science and Technology, Thiruvananthapuram, Kerala, India

- Spectral Analysis for the Species Characterization of Mangroves of Bhitarkanika National Park, Odisha, India using Hyperspectral Remote Sensing

06 / 2008 – 04 / 2010

M. Sc. (Earth Remote Sensing and Geo-Information Technology)

Madurai Kamaraj University, Madurai, Tamil Nadu, India

- Earth Sciences, Photogrammetry, Remote Sensing, GIS, Geostatistics, Environmental Science

07 / 2005 – 04 / 2008

B. Sc. (Geography)

Government College Kariavattom, University of Kerala, Thiruvananthapuram, Kerala, India

- Geography, Geology, Statistics

Conferences / Workshops
attended

- Attended more than 25 conferences / workshops nationally and internationally
- List of conferences/workshops attended can be found in <https://sites.google.com/view/aranprasadkumar/conferences-workshops>

Research Publications

- Kaliraj, S., Shunmugapriya, S., Lakshumanan, C., Suresh, D., **Prasad, K. A.**, & Srinivas R. (2024). "Flood Risk Zone Mapping and Future Projections for the Thamirabarani River Basin, Southern India - Insights from Decadal Rainfall Trends and GIS-based AHP Technique". *Natural Hazards* (Published on 15 Nov 2024). <https://doi.org/10.1007/s11069-024-07007-z>. Impact Factor: 3.3
- Humaira S., Thomas A.A., **Prasad, K. A.** & Gnanappazham L. (2024). "Multi-sensor Approach for the Estimation of Above Ground Biomass of Mangroves". *Journal of the Indian Society of Remote Sensing* (Published on 09 Feb 2024). <https://doi.org/10.1007/s12524-024-01811-7> Impact Factor: 2.5
- Balasubramani, K., Ravichandran, V., **Prasad, K.A.** et al. "Spatio-temporal epidemiology and associated indicators of COVID-19 (wave-I and II) in India". (2024). *Scientific Reports* 14, (220). <https://doi.org/10.1038/s41598-023-50363-2> Impact Factor: 4.6
- Prasanth S. R., Yaqoob, M., **Prasad, K. A.**, Shekhar S. & Gnanappazham L., "Characterizing Water Dynamics of Coastal Aquaculture Ponds using Index based Time Series Analysis". (2023). *IEEE India Geoscience and Remote Sensing Symposium (InGARSS)*, Bangalore, India, 2023, pp. 1-4, doi: <https://doi.org/10.1109/InGARSS59135.2023.10490355>
- Mathew, A., Mathai, A. K., Lakshmanan, G., & **Prasad, K. A.**, "Temporal analysis of mangrove species distribution in the mangroves of Pichavaram and Bhitarkanika". (2023). *IEEE India Geoscience and Remote Sensing Symposium (InGARSS)*, Bangalore, India, 2023, pp. 1-4, doi: <https://doi.org/10.1109/InGARSS59135.2023.10490339>
- Abhijith, T., Sanam, H., **Prasad, K. A.**, Mathai, A. K., & Gnanappazham, L. "Mapping High-Resolution Digital Terrain Model Using Terrestrial LiDAR Scanner in a Mangrove Wetland Ecosystem". (2023). *IEEE India Geoscience and Remote Sensing Symposium (InGARSS)*, Bangalore, India, 2023, pp. 1-4, doi: <https://doi.org/10.1109/InGARSS59135.2023.10490359>
- Mathai, A. K., Mathew, A., Lakshmanan, G., & **Prasad, K. A.**, "Bhitarkanika Mangrove Species Change Detection Using Hyperspectral Remote Sensing and Field Survey". (2023). *Proceedings of the 13th Workshop on Hyperspectral Imaging and Signal Processing: Evolution in Remote Sensing (WHISPERS)*, Athens, Greece, 2023, pp. 1-4, <https://doi.org/10.1109/WHISPERS61460.2023.10430649>
- Lalmalsawma, P., Balasubramani, K., Mariya James, M., Pautu, L., **Prasad, K. A.**, Kumar Sarma, D., & Balabaskaran Nina, P. (2023). "Malaria hotspots and climate change trends in the hyper-endemic malaria settings of Mizoram along the India-Bangladesh borders". *Scientific Reports*, 13(4538). <https://doi.org/10.1038/s41598-023-31632-6>. Impact Factor: 4.6
- Abarna, R., Leo George, S., Balasubramani, K., Yuvaraj, S., Shekhar, S., Gnanappazham, L., & **Prasad, K. A.** (2023). "Estimating built-up risk from multi-natural hazards: A case study of Northern coastal plains of Tamil Nadu". *Natural Hazards Research*, January. <https://doi.org/10.1016/j.nhres.2023.01.001>
- Jacob, A., **Prasad, K. A.**, Manickam, S., Balasubramani, K., & Vyshnav, R. (2023). "Mapping a Landslide Event on Puthumala, Kerala, India using SAR Interferometry". *2023 International Conference on Machine Intelligence for GeoAnalytics and Remote Sensing (MIGARS)*, 1–4. *IEEE*, <https://doi.org/10.1109/MIGARS57353.2023.10064499>
- Nujaira H., **Prasad K.A.**, Kumar P., Yunus A.P., Kharrazi A., et al. (2022). "Quantifying spatio-temporal variation in aquaculture production areas in Satkhira, Bangladesh using geospatial and social survey". *PLOS ONE* 17(12): e0278042. <https://doi.org/10.1371/journal.pone.0278042>. Impact factor: 3.24
- Humaira Sanam, Anjana Anie Thomas, **Arun Prasad Kumar**, & L. Gnanappazham (2022). "Multi-sensor Approach for the Estimation of Above Ground Biomass of Mangroves". *Proceedings of the 9th Digital Earth Summit – 2022 on Digital Earth to Bridge Digital Divide for Attainment of Sustainable Development Goals*, (06th to 8th September 2022), Chennai, India.
- Balasubramani, K., **Prasad, K. A.**, Kodali, N. K., Abdul Rasheed, N. K., Chellappan, S., Sarma, D. K., Kumar, M., Dixit, R., James, M. M., Behera, S. K., Shekhar, S., & Balabaskaran Nina, P. (2022). "Spatial epidemiology of acute respiratory infections in children under 5 years and associated risk factors in India: District-level analysis of health, household, and environmental datasets". *Frontiers in public health*, 10, 906248. <https://doi.org/10.3389/fpubh.2022.906248>. Impact factor: 6.461
- K. Kantamaneni, D. Christie, C. E. Lyddon, P. Huang, M. Nizar, K. Balasubramani, V. Ravichandran, **Kumar Arun Prasad**, R. R. B. Pushparaj, P. Robins, and S. Panneer. (2022). "A Comprehensive Assessment of Climate Change and Coastal Inundation through Satellite-Derived Datasets: A Case Study of Sabang Island, Indonesia". *Remote Sensing*. MDPI

- Publications. Vol. 14, No. 12, pp. 2857; <https://doi.org/10.3390/rs14122857>. Impact factor: 4.848
- S. Leo George, K. Kantamaneni, Rasme Allat V, **Kumar Arun Prasad**, Sulochana Shekhar, Sigamani Panneer, Louise Rice, and Balasubramani K. (2022). "A Multi-Data Geospatial Approach for Understanding Flood Risk in the Coastal Plains of Tamil Nadu, India". *Earth. MDPI Publications*. Vol. 3; No. 1; pp – 383-400. DOI: 10.3390/earth3010023.
 - S. Leo George, K. Balasubramani, Sulochana Shekhar, E. Venkatesham, **Kumar Arun Prasad**, Aakriti Grover, Dinabandhu Mahata, Ashish Kumar, V. V. Ashique, R. S. Libina, Divya Rajeswari Swaminathan, A. Balasundareshwaran, and K. Annaidasan. (2021). "A comprehensive study on preparedness, impacts, response and recovery from tropical severe cyclonic storm 'GAJA': lessons for the future". *Journal of Coastal Conservation*. Vol. 25; No. 58; pp – 891-912. DOI: 10.1007/s11852-021-00842-3. Impact factor: 1.839
 - Mu. Ramkumar, K. Kumaraswamy, K. Balasubramani, R. Nagarajan, M. Santhosh, S. Abdur Rahman, **Kumar Arun Prasad**, K. J. Juni, A. L. Fathima, N. A. Siddiqui, M. J. Mathew, D. Menier, B. Sautter, Rajveer Sharma, Pankaj Kumar, Sundeep Chopra, and R. Jegan Kumar. (2021). "Neolithic cultural sites and extreme climate related channel avulsion: Evidence from the Vaigai River Basin, Southern India". *Journal of Archaeological Science: Reports*. Vol. 40. Pp – 103204. DOI: 10.1016/j.jasrep.2021.103204
 - K Nivedita Priyadarshini, V. Sivashankari, Sulochana Shekhar, Karuppusamy Balasubramani, **Kumar Arun Prasad**. (2021). "Detecting heat-inducing urban built-up surface material with multi remote sensing datasets using reflectance and emission spectroscopy". *Remote Sensing of Environment*. Vol. 264, October 2021, 112591. DOI: 10.1016/j.rse.2021.112591. Impact factor: 10.164
 - Maria E. Mondejar, Ram Avtar, Heyker Lellani Baños Diaz, Rama Kant Dubey, Jesus Esteban, Abigail Gomez-Morales, Brett Hallam, Nsilulu Tresor Mbungu, Chukwuebuka, Christopher Okolo, **Kumar Arun Prasad**, Qianhong She, Sergi Garcia-Segura. (2021). "Digitalization to achieve sustainable development goals: Steps towards a Smart Green Planet". *Science of the Total Environment*. Volume 794, 10 November 2021, 148539. DOI: 10.1016/j.scitotenv.2021.148539. Impact factor: 7.963
 - **Kumar Arun Prasad**, Marco Ottinger, Chunzhu Wei, and Patrick Leinenkugel. (2019). "Assessment of Coastal Aquaculture for India from Sentinel-1 SAR time series". *Remote Sensing*. Vol. 11; No. 3; pp – 357. DOI: 10.3390/rs11030357. Impact factor: 4.848
 - Mahima Singh, Jayant Singhal, **K. Arun Prasad**, Dwijesh Ray, Priyadarshi Sahoo, and Rajesh V.J. 2016. "Spectral characteristics of banded iron formations in Singhbhum craton, eastern India: implications for hematite deposits on Mars". *Geosciences Frontiers*. Vol. 7; No. 6; pp – 927-936. DOI: 10.1016/j.gsf.2015.11.003. Impact Factor: 6.853
 - **Kumar Arun Prasad** and Lakshmanan Gnanappazham. (2016). "Multiple statistical approaches for the discrimination of mangrove species of *Rhizophoraceae* using transformed field and laboratory hyperspectral data". *Geocarto International*. Vol. 31; No. 8; pp – 891-912. DOI:10.1080/10106049.2015.1094521. Impact factor: 4.889
 - **Kumar Arun Prasad**, Lakshmanan Gnanappazham, Vaithilingam Selvam, Ramasamy Ramasubramanian, and Chandra Sekar Kar. (2015). "Developing a Spectral Library of Mangrove Species of Indian East Coast Using Field Spectroscopy". *Geocarto International*. Vol. 30; No. 5; pp – 580-599. DOI:10.1080/10106049.2014.985743. Impact factor: 4.889
 - **K. Arun Prasad** and L. Gnanappazham (2018), "Estimation of above ground biomass using high resolution multispectral Worldview-2 image". *Indian Cartographer: Journal of the Indian National Cartographic Association*. Vol 38; pp – 569-577. ISSN: 0972- 8392
 - **K. Arun Prasad** and L. Gnanappazham (2014), "Species Discrimination of mangroves using Derivative Spectral Analysis". *Proceedings of ISPRS 2014: ISPRS Annals of the Photogrammetry, Remote Sensing and Spatial Information Sciences*, Volume II-8, 2014. ISPRS Technical Commission VIII Symposium (09th to 12th December 2014), Hyderabad, India; DOI: 10.5194/isprsannals-II-8-45-2014
 - **K. Arun Prasad** and L. Gnanappazham (2014), "Discrimination of mangrove species of *Rhizophoraceae* using laboratory spectral signatures". *Proceedings of IGARSS 2014: International Geoscience and Remote Sensing Symposium* (IGARSS 2014) held in Quebec, Canada (13th to 18th July 2014); DOI: 10.1109/IGARSS.2014.6947084
 - **K. Arun Prasad** and L. Gnanappazham (2013), "Spectral distance as an approach for species level discrimination of mangroves". *Proceedings of AGSE 2013: International Conference on Geospatial Momentum for Society and Environment*, jointly organized by CEPT University, Ahmedabad and University of Stuttgart, Germany, held in Ahmedabad, India between December 16 and 19, 2013
 - **K. Arun Prasad** and L. Gnanappazham (2013), "Spectral separability among mangrove species of *Rhizophoraceae* family using field spectroscopy". *IEEE Conference Proceedings of Symposium on Ocean Electronics (SYMPOL 2013)*, organized by CUSAT, held in Kochi, India (23rd to 25th October, 2013); DOI: 10.1109/SYMPOL.2013.6701933

- Saravanan P., **Arun Prasad K.**, Sudha G., and Ilangovan P., (2011). "An assessment of environmental degradation: Case study of Avaniyapuram town panchayat, Madurai". *International Journal of Environmental Sciences*. Vol 1, No 7; pp 1504-1514. ISSN: 0976-4402.
- Shekhar, S., Balasubramani K., Venkatesham, E., & **Prasad, K. A.**, (Eds.). (2024). *Advancements in Sustainable Geography: Emerging Research Perspectives*. Central University of Tamil Nadu Publication Cell. ISBN: 9788196161095.
- L. Gnanappazham, **Kumar Arun Prasad**, and V. K. Dadhwal. (2021). "Geospatial Tools for Mapping and Monitoring Coastal Mangroves". *Mangroves: Ecology, Biodiversity and Management*. Rajesh P. Rastogi, Mahendra Phulwaria, Dharmendra K. Gupta (Eds.). Springer Publications. DOI: 10.1007/978-981-16-2494-0_21

Research Projects

Sl. No	Project Title	Funding Agency	Period	Amount Sanctioned (in INR)
1	Extraction of aquaculture objects from Sentinel 1 SAR data (Individual Consultancy Project) Role: Principal Investigator	German Aerospace Agency (DLR), Germany	Oct 2022 - Nov 2022 Completed	4,23,662
2	Ground level check survey of selected sites (50 ha) at Muthupet mangrove wetland, Thiruvarur to map microtopography for the regeneration and restoration of the mangroves (Institutional Consultancy Project) Role: One of the Principal Investigators	Thiruvarur Forest Division, Tamil Nadu Forest Department, Govt. of Tamil Nadu	Dec 2023 2024 to March 2024 Completed	2,81,147
3	Ground level check survey of selected sites (250 ha) at Muthupet mangrove wetland, Thiruvarur to map microtopography for the regeneration and restoration of the mangroves (Institutional Consultancy Project) Role: One of the PI's	Thiruvarur Forest Division, Tamil Nadu Forest Department, Govt. of Tamil Nadu	Dec 2023 2024 to March 2024 Completed	14,38,989
4	Assessing the Implications of Aquaculture on Environment and Socioeconomic Conditions in the Northern Coastal Plains of Tamil Nadu: A step towards Sustainable Shrimp Farming (Funded Research Project) Role: Principal Investigator	Indian Council of Social Science Research, New Delhi	2023- 2024	5,00,000

Research Guidance

PhD Scholars

- Mr. Ravi Prasanth S. (July 2022 - Present) – Remote Sensing Time Series Data for spatiotemporal analysis of natural and anthropogenic impacts on Coastal Wetlands in Northern Tamil Nadu
- Mr. Suresh Mondal (March 2023 - Present) – Ensemble Machine Learning Techniques to analyze the agricultural drought in semi-arid region of Tamil Nadu
- Mr. Ajaydas P. (December 2023 – Present) – Exploring the functional traits of native and invasive plant species in coastal wetlands of Northern Tamil Nadu using hyperspectral remote sensing.

M.Sc. Dissertation

The details on M.Sc. dissertation guidance are available in <https://sites.google.com/view/arunprasadkumar/team>

Memberships

- Member –“Humboldt Life” from Alexander von Humboldt Foundation, Germany
- Member – Green Talents Alumni Network (BMBF, Federal Government of Germany)
- Life Member – Indian Society of Remote Sensing (ISRS) (Member ID: L-5008)
- Life Member – Institute of Indian Geographers (IIG) (Member ID: L-1095)
- Member – IUCN Commission on Ecosystem Management (CEM) 2021-2025

Awards and Honours

- **International Climate Protection Fellowship** from Alexander von Humboldt Foundation funded by the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), Government of Germany in 2016.
- **Green Talents - Young Scientist Award** for research in Sustainable Development funded by the Federal Ministry of Education and Research (BMBF), Government of Germany in 2015.
- **IEEE IGARSS Travel Support Grant** to participate and present the research paper in International Geosciences and Remote Sensing Symposium (IGARSS 2014) / 35th Canadian Symposium on Remote Sensing (35th CSRS) held in Québec, Canada.
- Secured **36th Rank** and awarded **Junior Research Fellowship (JRF)** and qualified **National Eligibility Test (NET)** India in Earth, Atmospheric, Ocean and Planetary Sciences stream organized by Jointed Council for Scientific and Industrial Research and University Grants Commission (CSIR-UGC) under the MHRD, Government of India in July 2010.
- **University level First Rank** in M.Sc. (Earth Remote Sensing and Geo-Information Technology) in 2010 from Madurai Kamaraj University.
- **“Maveeran Sundaralingam Endowment Scholarship”** for the highest Score in Master of Science Degree in Environmental Remote sensing & Geo Information Technology (2009)
- **University Grants Commission (UGC) Post Graduate Merit Scholarship** for University Rank holders in Bachelor’s degree to study Master’s programme for the time period 2008 – 2010.
- **University level First Rank** in B.Sc. (Geography) in 2008 from University of Kerala.

Professional and Research Networking Sites

- LinkedIn - <https://www.linkedin.com/in/arun-prasad-kumar-283a6b30/>
- Research Gate - https://www.researchgate.net/profile/Arun_Kumar271
- Google Scholar - <https://scholar.google.de/citations?user=SAeuOg4AAAAJ&hl=en>
- ORCID ID - <https://orcid.org/0000-0003-1645-4261>
- Web of Science Researcher ID: [U-7453-2019](https://www.webofscience.com/wos/author/uri/uri:scid:U-7453-2019)
- Publons - <https://publons.com/researcher/3044826/arun-prasad-kumar/>

Reviewer in Journals

- Natural Hazards (Springer)
- ISPRS Journal of Photogrammetry and Remote Sensing (Elsevier)
- GIScience and Remote Sensing (Taylor and Francis)
- Aquaculture (Elsevier)
- IEEE Geosciences and Remote Sensing Letters
- IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing
- Humanities and Social Sciences Communications (Nature)
- The Lancet Regional Health: South East Asia
- Journal of Indian Society for Remote Sensing (Springer)
- Journal of Sustainable Forestry (Taylor and Francis)
- Environmental Monitoring and Assessment (Springer)
- Geological Journal (Wiley)
- The Indian Geographical Journal

