Prakhar Misra

Assistant Professor,
Indian Institute of Technology Roorkee

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https://geohues.github.io/

Keywords: Remote sensing, Air pollution, Emission inventory, Low-cost sensors, Urban climate, Land-use change, Urbanization,Transfer learning and Domain adaptation

Experience

Present	**Indian Institute of Technology Roorkee** , *Assistant Professor, Civil Engineering Department*.
2023/7	**Synspective Inc.**, *Tokyo*, *Chief Tech Lead (Applied Research)| SAR Application Engineer*.
2021/3	**Research Institute for Humanity and Nature**, *Kyoto*, *Researcher*.
2020/3	**The University of Tokyo**, *Project Assistant Professor, Institute of Industrial Science*.
2019/10	**The University of Tokyo**, *Project Researcher, Institute of Industrial Science*.
2016/12	**Sony Computer Science Laboratories**, Tokyo, *Research Assistant (part-time)*.
2015/02	**Inductis**, New Delhi, *Decision Science Analyst*.

Education

2015–2018 **PhD**	**The University of Tokyo, Japan (Civil Engineering)**, Analyzing Impact of Socio-economic Growth and Land-use Change on Urban Air Quality in India.
2008–2013 **B.Tech-M.Tech**	**Indian Institute of Technology Kanpur, India (Civil Engineering)**, *MTech specialization in Geoinformatics, titled:* Multi-resolution Segmentation Based Classification of Polarimetric SAR Imagery.

Patents

1. Arya A., Pamungkas B., Chavan R., **Misra P.**; Ground Fluctuation Analysis Device and Ground Fluctuation Analysis Method Japan Patent Office Application Number *GRANTED: CT/JP2022/26506*, Published on 2024/1/4.
2. Arya A., Pamungkas B., Chavan R., **Misra P.**; Ground Fluctuation Analysis Device and Ground Fluctuation Analysis Method Japan Patent Office Application Number *GRANTED: PCT/JP2022/26508*, Published on 2024/1/4.

Publications (peer-reviewed) (h-index 15, *GoogleScholar*)

1. **Misra P.**, Hayashida S., Moriayama M., Araki H.; Limitations of interpreting orbiting satellite-based fire detection for crop residue burning: Has rice straw burning in northwest India decreased in recent years? *International Journal of Applied Earth Observation and Geoinformation*, 152 (2026). **[Q1-IF 8.6]**
2. Mangaraj P., Matsumi Y., [and 21 others, including **Misra P.**]; Weak coupling of observed surface PM2.5 in Delhi-NCR with rice crop residue burning in Punjab and Haryana *npj Climate and Atmospheric Science* , 8, 1, (2025). **[Q1-IF 8.4]**
3. Sakti A.D., Anggraini T.S., Ihsan K.T., **Misra P.**, Nguyen T.T.N., Pradhan B., Wenten I.G., Hadi P.O., Wikantika K.; Multi-Air Pollution Risk Assessment in Southeast Asia Region Using Integrated Remote Sensing and Socio-Economic Data Products *Science of Total Environment* , 854, 158825, (2023). **[Q1-IF 8]**
4. Sovisoth E., Kuntal V.S., **Misra P.**, Takeuchi W., Nagai K.; Estimation of Year of Construction of Bridges in Cambodia by Analyzing the Landsat Normalized Difference Water Index *Infrastructures* , 8, 77, (2023). **[Q2-IF 2.9]**
5. Nitta K., **Misra P.**, Hayashida S.; Intercomparison of Tropospheric Nitrogen Dioxide over Indian Subcontinent Observed by TROPOMI and OMI. *Journal of The Remote Sensing Society of Japan*, 42, 36-50, (2022). **RSSJ Paper Encouragement Award**

6. **Misra P.**, Takigawa M., Khatri P., Dhaka S.K., Dimri A.P., Yamaji K., Kajino M., Takeuchi W., Imasu R., Patra P.K., Hayashida S.; NO2 Concentration and Emission change detection during COVID-19 restrictions in North India. *Nature Scientific Reports*, 11, 9800, (2021). **[Q1-IF 4.9]**
7. Nguyen T.T.Q, Takeuchi W., **Misra P.**, Hayashida S.; Emission mapping of key sectors in Ho Chi Minh city, Vietnam using satellite derived urban land-use data. *Atmospheric Chemistry and Physics*, 21, 2795-2818, (2021). **[Q1-IF 5.1]**
8. Rahman M.M., Avtar R., Ahmed S., Inostroza L., **Misra P.**, Kumar P., Takeuchi W., Surjan A., Saito O.; Does Building Development in Dhaka Comply Land Use Zoning? Analysis Using Nighttime Light and Digital Building Heights. *Sustainability Science*, 16, 1323-1340, (2021). **[Q1-IF 5.3]**
9. Khatri P., Hayasaka T., Holben B., Tripathi S.N., **Misra P.**, Patra P.K., Hayashida S., Dumka U.C.; Aerosol loading and radiation budget perturbations in densely populated and highly polluted Indo-Gangetic Plain by COVID-19: Influences on cloud properties and air temperature. *Geophysical Research Letters*, 48, 20, (2021). **[Q1-IF 4.6]**
10. Avtar R., Kouser K., Kumar A., Singh D., **Misra P.**, Gupta A., Yunus A.P., Kumar P., Johnson B.A., Dasgupta R., Sahu N., Rimba A.B.; Remote Sensing for International Peace and Security: Its Role and Implications. *Remote Sensing*, Vol 13(3), 439, (2021). **[Q1-IF 4.1]**
11. Avtar R., Singh D., Umarhadi D.A., Yunus A.P., **Misra P.**, Desai P.N., Kouser A., Kurniawan T.A., Phanindra K.B.V.N.; Impact of COVID-19 Lockdown on the Fisheries Sector: A Case Study from Three Harbors in Western India. *Remote Sensing*, Vol 13(2), 183, (2021). **[Q1-IF 4.1]**
12. **Misra P.**, Imasu R., Hayashida S., Ardhi A., Takeuchi W.; Mapping Brick Kilns to support Environmental Impact Studies around Delhi using Sentinel-2. *ISPRS International Journal of Geo-Information*, Vol 9(9), 544, (2020). **[Q1-IF 2.8]**
13. Dhaka S.K., Chetna, Kumar V., Panwar V., Dimri A.P., Singh N., Patra P.K., Matsumi Y., Takigawa M., Nakayama T., Yamaji K., Kajino M., **Misra P.**, Hayashida S.; PM2.5 diminution and mist events over Delhi during the COVID-19 lockdown period: an interplay between the baseline pollution and meteorology. *Nature Scientific Reports*, 10, 13442, (2020). **[Q1-IF 4.9]**
14. Rahman M.M., Avtar R., Yunus A.P., Dou J., **Misra P.**, Takeuchi W., Sahu N., Kumar P., Johnson B.A., Dasgupta R., Kharrazi A., Chakraborty S., Agustiono K.T.; Monitoring Effect of Spatial Growth on Land Surface Temperature in Dhaka. *Remote Sensing*, Vol 12(7), 1191, (2020). **[Q1-IF 4.1]**
15. **Misra P.**, Imasu R., Takeuchi W.; Impact of Urban Growth on Air Quality in Indian Cities Using Hierarchical Bayesian Approach. *Atmosphere*, Vol 10(9), 517, (2019). **[Q2-IF 2.3]**
16. Minh H.V.T., Avtar R., Mohan G., **Misra P.**, Kurasaki M.; Monitoring and Mapping of Rice Cropping Pattern in Flooding Area in the Vietnamese Mekong Delta Using Sentinel-1A Data: A Case of An Giang Province. *ISPRS International Journal of Geo-Information*, Vol 8(5), 211, (2019). **[Q1-IF 2.8]**
17. **Misra P.**, Avtar R., Takeuchi W.; Comparison of digital building height models extracted from AW3D, TanDEM-X, ASTER and SRTM digital surface model over Yangon city. *Remote Sensing*, Vol 10(12), 2008, (2018). **[Q1-IF 4.1]**
18. **Misra P.**, Fujikawa A., Takeuchi W.; Novel Decomposition Scheme for Characterizing Urban Air Quality with MODIS. *Remote Sensing*, Vol 9(8), 812, (2017). **[Q1-IF 4.1]**
19. **Misra P.**, Takeuchi W.; Air Quality Analysis Using Nighttime Light for Indian Urban Regions. *Malaysian Journal of Remote Sensing and GIS*, Vol 5(2), (2016).

Publications (conference)

1. Singh B.P., **Misra P.**; Automated LiDAR Scan-to-BIM Verification Framework for Cradle-to-Gate Embodied Carbon in a Reinforced Concrete Building *International Conference on Net Zero Carbon Built Environment (ICNZCBE 2026)*, Delhi, India, 2026.
2. Singh R.S., **Misra P.**; Optimising Pedestrian Thermal Comfort - A Physiological Shortest-Path Framework for Microclimate-Aware Routing *47th Asian Conference on Remote Sensing*, Delhi, India, 2026.
3. Prakriti, **Misra P.**; High-Resolution Air Temperature Mapping Over The Delhi Urban Agglomeration Using U-Net Based Downscaling Of ERA5-Land Data *47th Asian Conference on Remote Sensing*, Delhi, India, 2026.
4. Alawadhi L., **Misra P.**; Cross-Attention Fusion and Knowledge Distillation of SAR and SAR-Derived Optical Representations for Cloud-Resilient Built-up Area Segmentation *47th Asian Conference on Remote Sensing*, Delhi, India, 2026.

5. **First prize - poster presentation** Alawadhi L., **Misra P.**; Pratyaksh: SAR-2Optical Supervised CycleGAN for Image Translation. *International Conference on Vision 2047 - Prosperous and Great Bharat 2.0*, IIT Roorkee, India, 2026.
6. Chaurasia P., **Misra P.**; Adaptive Satellite-Based Ozone Precursor Sensitivity Diagnostics Across the Indo-Gangetic Plain. *33rd Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2026.
7. Prakriti, **Misra P.**; Urban Heat Stress Under High Aerosol Conditions: A Multi-City Study over the Indo-Gangetic Plains. *33rd Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2026.
8. Thakur K., **Misra P.**; 3D Mapping of Architectural Heritage Site Using 2D Gaussian Splatting. *33rd Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2026.
9. **First prize - technical presentation** Chaurasia P., **Misra P.**; Spatial distribution of ozone precursor sensitivity regimes over Delhi NCR: Insights from Sentinel-5P and spatial autocorrelation. *10^{th} Indian International Conference on Air Quality Management*, Delhi, India, 2025.
10. **Second prize - technical presentation** Prakriti, **Misra P.**; Linkage between urban aerosol and urban heat across Indian cities. *10^{th} Indian International Conference on Air Quality Management*, Delhi, India, 2025.
11. Bisht M., Thakur K., Jain K., **Misra P.**; GIS and Lidar Based Viewshed Analsysis of Uncontrolled Intersections. *4^{th} International Symposium on One Health One World*, Roorkee, India, 2025.
12. Mehta A., Chaurasia P., Takeuchi W., Imasu R., **Misra P.**; Brick Kiln Detection using Geospatial Datasets: A Deep Learning Approach For Environmental Monitoring. *4^{th} International Symposium on One Health One World*, Roorkee, India, 2025.
13. Anwar S., **Misra P.**; A Dynamic Network Approach to Analyze the Impact of Crop Residue Burning on Urban Air Quality Using Time-Lagged Correlation. *4^{th} International Symposium on One Health One World*, Roorkee, India, 2025.
14. Raheja H., **Misra P.**; Remote Sensing-Based Assessment of Turbidity and Chlorophyll Variations in the Ganga-Yamuna Rivers Sangam During the Kumbh Mela 2025. *XII Scientific Assembly of International Association of Hydrological Sciences (IAHS 2025)*, Roorkee, India, 2025.
15. Prakriti, **Misra P.**; Urban Heat Island Intensity and Aerosol Optical Depth Patterns Across Diverse Climate Zones in Indian Cities. *32nd Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2025.
16. Anwar S., **Misra P.**; A remote sensing approach to analyze the impact of crop residue burning on urban air quality using fire characteristics and PM2.5 to CO Ratio. *9^{th} India International Conference on Air Quality Management*, Chennai, India, 2024.
17. Mehta A., **Misra P.**; Deep Learning Based Brick Kiln Detection Using Sentinel-2 Imagery. *9^{th} India International Conference on Air Quality Management*, Chennai, India, 2024.
18. Bansal K., **Misra P.**; Exploring the Relationship Between Building Height And Sentinel-1 SAR GRD Backscatter at Pixel and Building Footprint Levels. *Indian Geoscience and Remote Sensing Symposium* , Goa, India, 2024.
19. Chaurasia P., **Misra P.**; Tropospheric Ozone Estimation Using Machine Learning of Remote Sensing Data-A Case Study of Delhi NCR. *Indian Geoscience and Remote Sensing Symposium* , Goa, India, 2024.
20. Chavhan R., **Misra P.**, Morishita Y., Arya A.; Detecting Precursor Onset Of Acceleration Based On Temporal Saliency And Non-parametric Spatial Clustering Of IPTA Displacements. *International Geoscience and Remote Sensing Symposium*, Califronia, USA, 2023.
21. Kambhampati P., **Misra P.**, Chavhan R., Arya A ; Low Latency Forest Logging Monitoring Using Differ-modality Learning Approach. *International Geoscience and Remote Sensing Symposium*, Califronia, USA, 2023.
22. Chavhan R.V., Arya A., **Misra P.**, Bingham Canyon: Detecting Precursor Onset of Acceleration Using Temporal Saliency and Non-Parametric Spatial Clustering, Japan Geoscience Union Meeting 2023, Chiba, Japan, 2023.
23. Koyama T., **Misra P.**, Arya A., Dwianca A., An Exploration of Atmospheric Reanalysis Usage to Assess Internal Erosion Susceptibility, Japan Geoscience Union Meeting 2023, Chiba, Japan, 2023.
24. Yokota Y., Date K., Mei C., Amanda, Hun Y.C., Kambhampati P., **Misra P.**; Application of Satellite Sensing Data to Ground Deformation Monitoring. *11^{th} International Symposium On Field Monitoring In Geomechanics*, London, UK, 2022.
25. Arya A., Pamungkas B., Chavan R., **Misra P.**; Advanced alerting mechanism for slope and ground instability based on spatio-temporal analysis of anomalous land displacement behavior from time-series InSAR. *International Symposium of Remote Sensing*, online, Japan, 2022.
26. **Misra P.**, Takigawa M., Khatri P., Dhaka S.K., Dimri A.P., Yamaji K., Kajino M., Takeuchi W., Imasu R., Patra P.K., Hayashida S.; COVID-19 lockdown impacts on NOx emission: top-down estimation over North India. *29^{th} Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2021.

27. **Misra P.**, Takeuchi W.; How well does KBDI compare with soil moisture for agriculture?: A cal/val study in Thailand. *29th Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2021.
28. **Misra P.**, Takigawa M., Khatri P., Dhaka S.K., Dimri A.P., Yamaji K., Kajino M., Takeuchi W., Imasu R., Patra P.K., Hayashida S.; Detection of significant change in nitrogen oxides concentration and emission during COVID-19 lockdown in North India. *2020 AGU Fall Meeting*, San Francisco, USA, 2020.
29. Hayashida S., **Misra P.**, Nitta K., Nguyen T.H., Patra P.K., Takigawa M., Khatri P., Dhaka S.K., Dimri A.P., Yamaji K., Takeuchi W.; Reduction of air pollutants over North-West India observed from space during the Covid-19 lockdown period. *2020 AGU Fall Meeting*, San Francisco, USA, 2020.
30. Nguyen T.H., Hayashida S., **Misra P.**, Matsumi Y., Nakayama T., Dhaka S.K., Dimri A.P.; Detection of Change in the Aerosol distribution over North-West India during the Covid-19 Lockdown period. *2020 AGU Fall Meeting*, San Francisco, USA, 2020.
31. **Misra P.**, Takeuchi W.; Assessing Population Sensitivity to Urban Air Pollution Using Google Trends and Remote Sensing Datasets. *Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci.*, XLII-3/W11, 93-100, (2020).
32. **Misra P.**, Takeuchi W., Imasu R.; Brick Kiln Detection in North India with Sentinel imagery using Deep Learning of Small Datasets. *40th Asian Conference of Remote Sensing*, Daejeon, South Korea, 2019.
33. **Misra P.**, Takeuchi W.; Assessing population sensitivity to urban air pollution using Google Trends and remote sensing datasets. *Pecora21/ISRSE38*, Baltimore, Maryland, USA, 2019.
34. Sovisoth E., Thakur V.B., Nagai K., **Misra P.**, Takeuchi W.; Estimation of the bridge construction year in Cambodia by the analysis of LANDSAT satellite data. *3rd ACF Symposium*, Sapporo, Japan, 2019.
35. **Misra P.**, Takeuchi W.; Use of Google Trends for Assessing Sensitivity of Population to Urban Air Pollution. *26th International Symposium on Remote Sensing*, Taipei, Taiwan, 2019.
36. Arbain A., Imasu R., **Misra P.**, Takeuchi W.; Estimating $PM_{2.5}$ Emission from Brick Kiln Industry over Northern India with Numerical Model and Remote Sensing Observation. *EGU General Assembly*, Vienna, Austria, 2019.
37. **Misra P.**, Takeuchi W.; Analyzing perception of urban air pollution using Google Trends and satellite datasets. *27th Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2019.
38. **Misra P.**, Takeuchi W.; A Novel Technique for Estimating Expansion of Residential, Commercial and Industrial Regions in Indian Megacities. *17th International Symposium on Urban Safety Of Mega Cities In Asia*, Hyderabad, India, 2018.
39. **Best Paper Award Finalist** **Misra P.**, Imasu R., Takeuchi W.; Land-use Change Impacts on Urban Air Quality in India using Hierarchical Bayesian Approach. *39th Asian Conference of Remote Sensing*, Kuala Lumpur, Malaysia, 2018.
40. Ochi S., **Misra P.**, Takeuchi W.; Spatiotemporal Distribution Of Hotspot / Wildfire In Southeast Asia Using Remote Sensing Data. *39th Asian Conference of Remote Sensing*, Kuala Lumpur, Malaysia, 2018.
41. **Best Paper Award** **Misra P.**, Takeuchi W.; Hierarchical Bayesian approach to estimate land-use change impacts on urban air pollution in India. *26th Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2018.
42. **Misra P.**, Takeuchi W.; Digital Surface Model (DSM) datasets for built-height estimation over Indian cities. *24th International Symposium on Remote Sensing*, Nagoya, Japan, 2017.
43. **Misra P.**, Takeuchi W.; Comparison of ASTER and AW3D derived Digital Surface Model datasets for built structure height estimation over Yangon city, Myanmar. *25th Institute of Industrial Science Forum Proceedings*, Tokyo, Japan, 2017.
44. **Misra P.**, Takeuchi W.; Assessing Impact of Economic Activities on Urban Air Quality in India by Nightlight and Atmospheric Measurement Datasets. *37th Asian Conference of Remote Sensing*, Colombo, Sri Lanka, 2016.
45. **Misra P.**, Takeuchi W.; Air Quality Analysis Using Nighttime Light for Indian Urban Regions. *8th IGRSM International Conference and Exhibition on Geospatial & Remote Sensing* , Kuala Lumpur, Malaysia, 2016.
46. **Misra P.**, Takeuchi W.; Analysis Of Air Quality In Indian Cities Using Remote Sensing And Economic Growth Parameters. *36th Asian Conference on Remote Sensing*, Manila, Philippines, 2015.

Book chapter

- Kumar S., **Misra P.**; Machine Learning of NDVI Time Series Identifies Ghost Villages in Uttarakhand, India. In: Vadrevu KP, Justice C, Gutman G. (eds) Remote Sensing of Land Cover and Land Use Changes in South and Southeast Asia, Volume 1 . Taylor and Francis (2025)
- Raut A., **Misra P.**, Kumar N., Avtar R.; Assessment of nitrogen dioxide concentrations in nonattainment cities during COVID-19 lockdown using GIS technique. In: Behera, M.D., Behera, S.K.Hashimoto, S., Barik, S.K. (eds)

Sustainable Development Perspectives in Earth Observation (pp. 383-398). Elsevier (2025)

- Kumar S., **Misra P.**; Remote Sensing of 'Ghost Villages': The Challenge of Rural Migration in the Mountainous State of Uttarakhand, India. In: Meraj, G., Hashimoto, S., Kumar, P. (eds) Navigating Natural Hazards in Mountainous Topographies (pp. 267-279). Springer, Cham. (2024)

Reports

- **Misra P.**; Clean Air and Imagined Sustainability: The case of India. *Aakash Newsletter*, Vol. 1(1) 2020.
- **Misra P.**, Sharma R.; India's GAGAN (GPS-aided GEO augmented navigation) adds a new dimension to navigation. *GIM International*, Vol. 27(2) 2013.

Presentation and seminars

1. **(invited)** Seeing the unseen: SAR applications in a rapidly changing world. *Evolving Defence Geospatial Engineering (EDGE Seminar)*, CME Pune, India. (2025/11/03)
2. **(invited)** *Long-Term RD Strategy for Innovation Disruption in Geospatial Technology in India*, NIAS Bengaluru, India. (2025/08/28)
3. **(invited)** Limitations of orbiting satellite-based fire detection for crop residue burning in Northwest India. *International workshop on air polluton in the northwestern India and future perspectives*, IIT Delhi, India. (2025/03/13)
4. **(invited)** Top-down emission inventory using remote sensing – glimpses from the windows of opportunity (COVID19). *5th Aakash Project International Scientific Workshop*, Kyoto, Japan. (2024/08/28)
5. **(invited)** Impact of COVID-19 lockdown on NOx concentrations and emissions in North India. *Knowledge Sharing Symposium on Machine Learning and Deep Learning in Geoinformatics, Hokkaido University*, online. (2020/11/30)
6. **(invited)** Remote Sensing for Air Quality Management. *Remote Sensing Application on Comtemporary Environmental Issues, Pabna University of Science & Technology, Bangladesh*, online. (2020/11/24)
7. **(invited)** Impact of Urban Growth on Air Quality in Indian Cities. *FTSP New Normal Webinar, Institut Teknologi Nasional, Bandung*, online. (2020/06/25)
8. Public interest in air quality and its impact varies with baseline exposure: Google Trends and Remote Sensing based analysis. *22nd CEReS Symposium on Environment Remote Sensing, Chiba University*, Chiba, Japan. (2020/02/20)
9. **(invited)** Remote Sensing for Urban Studies Mapping Land-use for Emission Inventories in Developing Countries. *Young Sustainability Symposium, Hokkaido University*, Sapporo, Japan. (2020/02/03)
10. **(invited)** Mapping Drivers of Urban Air-pollution in Indian Cities using Remote Sensing. *Sakura Science Exchange Program, Shibaura Institute of Technology*, Tokyo, Japan. (2019/11/20)
11. Monitoring Land-use Drivers of Urban Air Pollution and its Response using Remote Sensing and Social Sensing, *Data-based Society Creation Symposium 2019*, Tokyo, Japan. (2019/09/01)
12. Brick kiln detection around New Delhi using Sentinel 2 with Deep Learning: Distribution and Drivers. *NASA LCLUC SARI International Regional Science Meeting*, Johor Bahru, Malaysia. (2019/07/24)
13. Comparison of Remote Sensing derived KBDI with in-site Soil-moisture in Thailand. *JAXA-GISTDA mini workshop on drought monitoring*, Bangkok, Thailand. (2019/05/17)
14. Observations from Mapping PM2.5 in Indian Cities using Low-cost sensor. *1st IITK-UTokyo Workshop on PM2.5 Mapping using Low-cost Sensors*, Kanpur, India. (2019/02/06)
15. Role of satellite for monitoring urban air quality. *1st IITK-UTokyo Workshop on PM2.5 Mapping using Low-cost Sensors*, Kanpur, India. (2019/02/07)
16. GEE as educational tool in Civil Engineering. *Google Earth Engine Year-end Meetup in Tokyo*, Tokyo, Japan. (2018/12/26)
17. Impact assessment of socio economic development on urban air quality in Indian megacities *NASA LCLUC SARI International Regional Science Meeting*, Chiang Mai,Thailand. (2017/07/17)

Conference/Workshop/Training lecture organized

2026 **MDP on AI, ML & Big Data Analytics** Geospatial AI and Remote Sensing (9/22-24, 12/22-24)

2026 **2-Day Workshop on Drone Technology, Applications and Hands-on processing** Emerging role of UAVs in Urban Environment (5/25-5/26)

2025 **MDP on AI, ML & Big Data Analytics** Geospatial AI and Remote Sensing (8/20-22, 11/18-19)

2025 **FDP on empowering educators with AI tools** Assessment and evaluation using AI Tools (5/31)

2025 **Geospatial Survey and GIS Training for Land Revenue Officers** Image Processing and Georeferencing (2/19)

2024 **Workshop on UAV For Landslides: Learn Application of UAV in Monitoring Landslides, IIT Roorkee** GNSS, datums, and projections (5/14)

2024 **International Conference on Geomatics in Civil Engineering, IIT Roorkee** (3/11-3/12)

2021 **3rd Global Land Programme Asia Conference 2021, Hokkaido University** Geospatial Data for Terrestrial Ecosystem Monitoring & Hands-on-Training Session on Extraction of Building Phenotype (9/17)

2020 **(invited) Knowledge Sharing Symposium on Machine Learning and Deep Learning in Geoinformatics, Hokkaido University** Multi-temporal land-cover Classification using Cloud Platform (12/1)

2019 **(invited) NASA SARI Remote Sensing Land Use change and Climate Impacts in Coastal Zone Regional Science Training, Phuket, Thailand** Blue Carbon Mapping and Coastal Zone studies using GEE (12/17)

2019 **(invited) 5th International Conferences of Indonesian Society for Remote Sensing (ICOIRS), Bandung, Indonesia** Cloud based satellite image processing: Introduction to GEE (09/17)

2019 **(invited) Suranaree University of Technology, Nakhon Ratchaseema, Thailand** Air quality monitoring and mapping with portable devices (05/15)

2019 **4th Open Science Meeting, Global Land Program, Bern, Switzerland** Hands-on-training session on evaluating three-dimensional urban expansion in mega cities in Asia (04/27)

2019 **(invited) 26th International Symposium on Remote Sensing - ISPRS TC-W/8 Tutorial, Taipei, Taiwan** Remote Sensing Applications using Google Earth Engine (04/18)

2019 **1st IITK-UTokyo Workshop on PM$_{2.5}$ Mapping using Low-cost Sensors, IIT Kanpur, India** Citizen science workshop for mapping geolocated individual exposure to PM 2.5 using low-cost devices. (02/05–02/07)

2019 **(invited) 27th IIS Forum, The University of Tokyo, Tokyo, Japan** Classifying Landsat8 imagery using Google Earth Engine (03/07–03/08)

2018 **Indian Institute of Technology-BHU, Varanasi, India** Classifying Landsat8 imagery using Google Earth Engine and demonstration of portable PM$_{2.5}$ sensors (06/04)

2018 **(invited) 26th IIS Forum, The University of Tokyo, Tokyo, Japan Google Earth Engine for Landsat imagery classification (03/07–03/08)**

Teaching

(*team-teaching)

NPTEL Course

CE12 **Drone Surveying (co-developed)** *, 2026, 2027.

Courses at IIT Roorkee

CEN102 **Geospatial Engineering-I**, 2024, 2025, 2026.

CEN201 **Geospatial Engineering-II**, 2024, 2025, 2026.

CEN514 **Geodesy and GNSS** *, 2023.

CEL611 **Analytical and Digital Photogrammetry***, 2025.

Courses at other institutes

2021/09 **Environmental Science for Atmosphere and Hydrosphere***, *Nara Women's University, Japan.*

RS 3713-089 **Remote sensing (3713-089)***, *The University of Tokyo, Tokyo, Japan*, 2018, 2019.

2019/01 **Satellite Image Processing for Remote Sensing Applications***, *Short course at Seoul National University, South Korea.*

Current scholars being mentored

PhD 3 (MHRD), 1 (part-time)

MTech 2

MTech thesis guided (5)

Thakur Kapil An End-to-End Approach to Reconstructing 3D Model using Novel View Synthesis* (2025)

Bisht Mansi Analysis of Sight Distances at Uncontrolled Intersections using GIS and LiDAR* (2025)

Anwar Sayeed A Spatial Correlation Network Approach to Analyze the Impact of Crop Residue Burning on Urban Air Quality Using CUPI-G Sensor Network in North-west India (2025)

Mehta Avinash Brick Kiln Detection and Classification Using Geospatial Datasets: A Deep Learning Approach for Environmental Monitoring (2025)

Kumar Sarvjeet Identification of Ghost Villages in Uttarakhand using Machine Learning of NDVI Time Series (2024)

Fellowship, Grants and Awards

2026 LOTUS Fellowship, Japan Science and Technology Agency (JST)

2025 LOTUS Fellowship (twice), Japan Science and Technology Agency (JST)

2022 RSSJ Paper Encouragement Award, Remote Sensing Society of Japan

2022 2nd prize, NEDO Supply Chain Challenge, USD 40,000

2021 Most Valuable Person award (twice), Synspective, Inc.

2019 International Travel Grant, Tateishi Science and Technology Foundation, USD 4000

2019 International research meeting dispatch grant (IIS), USD 3500; (declined)

2018 Best Student Award, IIS Forum, University of Tokyo

2015 MEXT Scholarship, Japanese Government; tuition and stipend

2014 'Star Performer', 'Best Team of Year' at EXL Inductis

2010 Awarded 1st, 3rd prize for Birla White Cement National Innovative Design Competition

2009 Incentive Scheme for Meritorious Children by the State Bank of India; stipend

2006 National Talent Search (NTSE) Scholarship by Government of India; stipend

Participation in Seminar/Workshop/Conference

1. Geosmart Conference, Hyderabad, India (16-17 October, 2023)
2. 8th India International Conference on Air Quality Management, Bengaluru, India (4-8 December, 2023)

Visits to outside Institutes

1. The University of Tokyo, Tokyo Japan (15 June-14 July, 2026)
2. Nara Women's University, Nara, Japan (1 July, 2026)
3. Research Institute of Humanity and Nature, Kyoto, Japan (2 July, 2026)
4. National Institute of Information and Communications Technology , Tokyo, Japan (10 July, 2026)
5. Research Institute of Humanity and Nature, Kyoto, Japan (26-31 August, 2024)

Services at IIT Roorkee

2026-28 CED DAPC member Secretary, CED TT Committee member, CED UG Faculty Advisor, OC MTech

2024-26 CED DFC Secretary, CED TT Committee member, CED UG Faculty Advisor, CED DFSC member

2023-24 CED DAPC member, CED PhD Faculty advisor

Professional service

Reviewer	T&F International Journal of Remote Sensing, IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, Elsevier Resources Conservation and Recycling; Nature Elsevier Scientific Reports, Springer Sustainability Science, MDPI Remote Sensing; MDPI Atmosphere;
Member	IEEE Geoscience and Remote Sensing Society (GRSS), American Geophysical Union (AGU), Integrated Land Ecosystem-Atmosphere Processes Study Early Career Scientist Network (iLeaps), Global Land Program (GLP)

Social service

2016-'17	Vice-president, University of Tokyo Indian Students' Association
2016/07	Global Health Entrepreneurship Program for improving health in Onagawa, Miyagi
2015/05	Student volunteer, Empowerment Program Ibaraki High School, Mito City
2014–'15	SPOC, NGO for underprivileged Udayan Care, Gurgaon, India
2009-'10	Student guide, Institute Counselling Service, IIT Kanpur