

Prakhar Misra

Project Researcher, The University of Tokyo

Keywords: Urban air pollution, Land-use change, Urbanization and emission inventory, Biomass burning, Social sensing, Low-cost portable sensors, Deep learning, Google Earth Engine, Open data

Education

- 2015–2018 **PhD in Civil Engineering (Remote Sensing), The University of Tokyo, Japan**,
Thesis: Analyzing Impact of Socio-economic Growth and Land-use Change on Urban Air quality in India, Advisor: Dr. Wataru Takeuchi.
- 2008–2013 **B.Tech.-M.Tech (Dual degree) in Civil Engineering, Indian Institute of Technology, Kanpur (IIT Kanpur), India**,
Thesis: Multi-resolution Segmentation Based Classification of Polarimetric SAR Imagery, Advisor: Dr. Onkar Dikshit.

Experience

- 2018/10 - **Institute of Industrial Science, The University of Tokyo, Project Researcher.**
present Researching agromet cross comparison and validation for rice crop outlook in Thailand
- 2015/10 - **Sony Computer Science Laboratories, Tokyo, Japan, Research Assistant.**
2016/12 Analyzed energy exchange efficiency in 'Open Energy System' for decentralized PV grid
- 2013/09 - **Inductis, New Delhi, India, Consultant.**
2015/02 Predictive modelling of unsecured credit risk using financial Big Data for Barclays Bank. Awarded 'Best Team' and 'Star Performer'
- 2011/05 - **Bharat Petroleum Corporation Limited, Mumbai, India, Technical Assistant.**
2011/06 Performed energy audit and feasibility study for solar-wind powered renewable energy plant

Peer-reviewed publications

- Misra P, Imasu R, Takeuchi W; Impact of Urban Growth on Air Quality in Indian Cities Using Hierarchical Bayesian Approach. *Atmosphere*, Vol 10(9), 2019.
- Minh HVT, 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), 2019.
- 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), 2018.
- Misra P, Fujikawa A, Takeuchi W; Novel Decomposition Scheme for Characterizing Urban Air Quality with MODIS. *Remote Sensing*, Vol 9(8), 2017.
- 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.

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Conference publications

- 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.
- Misra P, Takeuchi W; Assessing population sensitivity to urban air pollution using Google Trends and remote sensing datasets. *40th Pecora21/ISRSE38*, Baltimore, Maryland, USA, 2019.
- Sovisoth E, Thakur VB, 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.
- 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.
- 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.
- 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.
- 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.
- 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. **Best Paper Award Finalist**
- 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.
- 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. **Best student Award**.
- 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.
- 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.
- 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.
- 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.
- 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.

Technical Report

- Misra P, Sharma R; India's GAGAN (GPS-aided GEO augmented navigation) adds a new dimension to navigation. *GIM International*, Vol. 27(2) 2013.

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Presentation and seminars

- Misra P, Takeuchi W; 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)
- Misra P, Takeuchi W; 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)
- Misra P, Takeuchi W; 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)
- Misra P; Observations from Mapping PM_{2.5} in Indian Cities using Low-cost sensor. *1st IITK-UTokyo Workshop on PM_{2.5} Mapping using Low-cost Sensors*, Kanpur, India. (2019/02/06)
- Misra P, Takeuchi W; Role of satellite for monitoring urban air quality. *1st IITK-UTokyo Workshop on PM_{2.5} Mapping using Low-cost Sensors*, Kanpur, India. (2019/02/07)
- Misra P; GEE as educational tool in Civil Engineering. *Google Earth Engine Year-end Meetup in Tokyo*, Tokyo, Japan. (2018/12/26)
- Misra P, Takeuchi W; 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)

Workshops and training organized

- 2019/09/17 **5th International Conferences of Indonesian Society for Remote Sensing (ICOIRS), Bandung, Indonesia** Cloud based satellite image processing: Introduction to GEE
- 2019/05/15 **Suranaree University of Technology, Nakhon Ratchaseema, Thailand** Air quality monitoring and mapping with portable devices
- 2019/04/27 **4th Open Science Meeting, Global Land Program, Bern, Switzerland** Hands-on-training session on evaluating three-dimensional urban expansion in mega cities in Asia
- 2019/04/18 **26th International Symposium on Remote Sensing - ISPRS TC-W/8 Tutorial, Taipei, Taiwan** Remote Sensing Applications using Google Earth Engine
- 2019/02/05 - **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.
2019/02/07
- 2019/03/07 - **27th IIS Forum, The University of Tokyo, Tokyo, Japan** Classifying Landsat8 imagery using Google Earth Engine
2019/03/08
- 2019/06/04 **Indian Institute of Technology-BHU, Varanasi, India** Classifying Landsat8 imagery using Google Earth Engine and demonstration of portable PM_{2.5} sensors
- 2018/03/07 - **26th IIS Forum, The University of Tokyo, Tokyo, Japan** Google Earth Engine for Landsat imagery classification
2018/03/08

Teaching

(*team-teaching, +teaching-assistant)

2019, '18, '17 **Remote sensing (3713-089) ***, *The University of Tokyo*.

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- 2019/01 **Satellite Image Processing for Remote Sensing Applications ***, *Seoul National University*.
- 2013/01 **Precision Remote Sensing (CE676)** + , *IIT Kanpur*.
- 2012/08 **Environmental Quality and Pollution (CE361)** + , *IIT Kanpur*.

Fellowship and grants

- 2019 Tateishi Science and Technology Foundation, JPY 397,000
- 2019 International research meeting dispatch grant (IIS), JPY 365,000; (Declined)
- 2015 Japanese Government (MEXT) Scholarship; tuition and stipend
- 2009 Incentive Scheme for Meritorious Children by State Bank of India; stipend
- 2006 National Talent Search (NTSE) Scholarship by Government of India; stipend

Technical skills

- Programming Python, R, JS, C, SQL, VBA, SAS
- Tools Google Earth Engine, QGIS, SNAP, ArcGIS, ENVI, TerraScan, GDAL

Professional service

- Reviewer MDPI Remote Sensing; Elsevier Resources Conservation and Recycling; Springer Sustainability Science

Social service

- 2016-'17 Vice-president, University of Tokyo Indian Students' Association
- June'16 Global Health Entrepreneurship Program for improving health in Onagawa, Miyagi
- May'15 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

References

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