

Curriculum Vitae

Dr. Santosh Subhash Palmate

Postdoctoral Researcher | FAA Certified Drone Pilot

Texas A&M AgriLife Research Center,

Texas A&M University System

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RESEARCH INTERESTS

Managing land and water resources for sustaining natural ecosystems using Remote sensing, Geographical Information System (GIS), Internet of Things (IoT), Artificial Intelligence (AI), and Machine Learning (ML) techniques.

- PostDoc*
- Aerial remote sensing (hyperspectral, multispectral and thermal imaging using drones, a bench and a tripod systems); detection of crop stresses (water stress, soil salinity stress, and nutrient stress); Digital and precision agriculture; Agroecosystem modeling; System dynamics modeling; Transboundary water systems management; Participatory modeling
- Job@WISA*
- Inventory modeling (maximum entropy algorithm); Wetland conservation and restoration planning in different biogeographic zones; Disaster risk management; Ecosystem services assessment
- Ph.D*
- Hydrological modeling; Watershed management; Best management practices (BMP) evaluation; Land use & climate change impact assessment; RS&GIS application

EDUCATION

- 2013-2019 **Indian Institute of Technology Roorkee (Uttarakhand, India)**
Ph.D. in “Water Resources Development and Management”, Ph.D. course-work CGPA: 8.67 (Scale 10), First Division with Distinction
Thesis entitled “Hydrological modeling to study the interactions of land use-climate-hydrology for sustainable river basin management”
- 2011-2013 **Indian Institute of Technology Roorkee (Uttarakhand, India)**
M.Tech. in “Irrigation Water Management”, CGPA: 8.529 (Scale 10), First Division with Distinction
Thesis entitled “Impact of climate change on hydrological response of a river basin”
- 2007-2011 **Marathwada Agricultural University Parbhani (Maharashtra, India)**
B.Tech. in “Agricultural Engineering”, CGPA: 8.28 (Scale 10), First Division
- 2006-2007 **Mahatma Gandhi College Ahmedpur (Maharashtra, India)**
H.S.C. (12th Class) in Science, Percentage: 75.50, First class with Distinction
- 2004-2005 **Yashwant School Ahmedpur (Maharashtra, India)**
S.S.C. (10th Class), Percentage: 78.13, First class with Distinction

RESEARCH AND PROFESSIONAL EXPERIENCE

- 2022(Aug)-
present **Texas A&M AgriLife Research, Texas A&M University (Texas, USA)**
Postdoctoral Research Associate in the ‘[Water Resources and Salinity Management Research Program](#)’ (Supervisor: Prof. Girisha K. Ganjgunte)
- 2020(Sep)-
2022 (July) **Texas A&M AgriLife Research, Texas A&M University (Texas, USA)**
Postdoctoral Research Associate in the ‘[Water System Dynamics and Resilience Program](#)’ (Supervisor: Dr. Saurav Kumar) (Website: <https://waterdmd.info/mainpage.html>)
- 2019(Sep)-
2020(Aug) **Wetlands International South Asia, New Delhi (Delhi, India)**
Technical Officer - Water Management coordinated projects relating to the hydrological assessment of wetlands and provided crucial information in implementing water management strategies across different landscapes. (Director: Dr. Ritesh Kumar)
- 2019 (May
to Aug) **Indian Institute of Technology Roorkee (Uttarakhand, India)**
Project Research Fellow in a sponsored R&D project on “Forecasting Agricultural output

- using Space Agrometeorology and Land-based observations (FASAL)” (No.: MES-556-WRD/10-11) of Ministry of Earth Sciences (MoES). (Project PI: Prof. Ashish Pandey)
- 2017(Apr)-**Christian-Albrechts-Universität zu Kiel (Schleswig-Holstein, Germany)**
2017(Nov) Visiting Research Fellow conducted important part of Ph.D. research based on SWAT modeling in the Department of Hydrology and Water Resources Management, Kiel University (Host mentor: Prof. Dr. Nicola Fohrer)
- 2013(Jul)-**Indian Institute of Technology Roorkee (Uttarakhand, India)**
2019(Apr) Research Scholar in the project entitled “Hydrological Response of a River Basin in Changing Climate” (No.: MoW-628/WRD) of Ministry of Water Resources (MoWR). (Supervisor: Prof. Ashish Pandey)

HONORS AND AWARDS

- 2022 Elected as the **YESS (Young Earth System Scientists) Regional Representative** for North America for the period April 2022 - March 2023.
- 2021 Certified **Federal Aviation Administration (FAA) Part 107 Remote Pilot** for commercial drone (small unmanned aircraft system) operations in the USA.
- 2021 Awarded the **Best Water Resources Student Award 2019** by Indian Water Resources Society (IWRS) to honor Ph.D. research in water resources making an imprint towards prosperity and significant contributions to society.
- 2021 Awarded the **Coalition for Disaster Resilient Infrastructure (CDRI) 2021 Fellowship** with a grant amount of \$10000 to conduct a short-term research project entitled “Inventory of High-Altitude Wetlands in the transboundary Himalayan region (InHAW)” from June-2021 to May-2022.
- 2020 Awarded **ARO (Agricultural Research Organization) Israel – India Postdoctoral Fellowships 2020-2021** to conduct research in Dr. Yafit Cohen’s lab for 1-year in the Volcani Center, Israel. (*Not Availed*)
- 2019 Awarded Travel Support by **DST, SERB, Government of India (GoI)** to participate and present research work in the European Geosciences Union (EGU) General Assembly 2019 at Vienna, Austria.
- 2017 Awarded fellowship of the **World Bank Robert S. McNamara Fellowships Program (RSMFP)-2017** for 8-months research stays in the Kiel University, Germany.
- 2017 Awarded the **Early Career Scientist's Travel Support** to participate and present research work in the EGU General Assembly 2017 at Vienna, Austria.
- 2016 Awarded scholarship by **DAAD** to participate in the International Summer Academy-2016 at the University of Koblenz and Landau, Landau Campus, Germany.
- 2016 Awarded scholarship by **University of Bergen (UiB)** to participate in the Bergen Summer Research School-2016 at Bergen, Norway.
- 2015 Awarded fellowship by **UN-CECAR, United Nations University (UNU)** to participate in the Climate Change Downscaling Approaches and Applications (CCDAA)-2015 training program at SLIIT, Colombo, Sri Lanka.
- 2013 Awarded fellowship of the **MHRD, Government of India** for the Ph.D. program.
- 2011 Awarded fellowship of the **MHRD, Government of India** for M.Tech. program.
- 2011 Secured All India Rank-187 and Score 361 in the Graduate Aptitude Test in Engineering (**GATE**)-2011.

SKILLS

- Drone Pilot** UAV flying experience of 70 hrs in the year 2021; Ongoing UAV fly work in 2022.
- Coding** R (basics), Python (basics) programming, Google Earth Engine (GEE)
- Modeling** SMITUV, HYDRUS, MaxEnt, ArcSWAT, DSSAT, CROPWAT, HEC-RAS&HMS
- Software** Pix4D, SpectronPro, STELLA, ENVI, ArcGIS(Pro), ERDAS Imagine, IDRISI Selva, TIMESAT, MRT, RStudio, OriginPro,
- System** Windows
- Language** English (*medium of all education from high-school onwards and till-date*), Hindi (*majorly speaking language in home country*), Sanskrit (*5 years of classes for second language subject in school & high-school*), and Marathi (*native speaker*)

PUBLICATIONS

Journal

- 2022 9. **Palmate, S. S.**, Kumar, S., Poulouse, T., Ganjegunte, G., Chaganti, V.A., & Sheng, Z. (2022). Comparing the effect of different irrigation water scenarios on arid region pecan orchard using a system dynamics approach. *Agricultural Water Management*, 265, 107547. <https://doi.org/10.1016/j.agwat.2022.107547> (Q1, IF: 6.611)
- 2021 8. Talchabhadel, R., McMillan, H., **Palmate, S. S.**, Sanchez, R., Sheng, Z., & Kumar, S. (2021). Current Status and Future Directions in Modeling a Transboundary Aquifer: A Case Study of Hueco Bolson. *Water*, 13(22), 3178. <https://doi.org/10.3390/w13223178> (Q1, IF: 3.103)
- 2021 7. **Palmate, S. S.**, Wagner, P. D., Fohrer, N., & Pandey, A. (2021). Assessment of Uncertainties in Modelling Land Use Change with an Integrated Cellular Automata–Markov Chain Model. *Environmental Modeling & Assessment*, 27, 275–293. <https://doi.org/10.1007/s10666-021-09804-3> (Q2, IF: 2.016)
- 2021 6. **Palmate, S. S.**, Pandey, A., Pandey, R. P., & Mishra, S. K. (2021). Assessing the land degradation and greening response to changes in hydro-climatic variables using a conceptual framework: A case study of central India. *Land Degradation & Development*, 32 (14), 4132-4148. <https://doi.org/10.1002/ldr.4014> (Q1, IF: 4.377)
- 2019 5. Pandey, A., & **Palmate, S.S.** (2019). Assessing future water-sediment interaction and critical area prioritization at sub-watershed level for sustainable management. *Paddy and Water Environment*, 17(3): 373–382. <https://doi.org/10.1007/s10333-019-00732-3> (Q2, IF: 1.554)
- 2018 4. Pandey, A., & **Palmate, S. S.** (2018). Assessments of spatial land cover dynamic hotspots employing MODIS time-series datasets in the Ken River Basin of Central India. *Arabian Journal of Geosciences*, 11: 479. <https://doi.org/10.1007/s12517-018-3812-z> (Q2, IF: 1.827)
- 2017 3. **Palmate S. S.**, Pandey A., & Mishra, S. K. (2017). Modelling spatiotemporal Land dynamics for a trans-boundary river basin using an integrated Cellular Automata and Markov Chain approach. *Applied Geography*, 82: 11-23. <https://doi.org/10.1016/j.apgeog.2017.03.001> (Q1, IF: 4.732)
- 2017 2. Kumar, D., Gautam, A. K., **Palmate, S. S.**, Pandey, A., Suryavanshi, S., Rathore, N. & Sharma, N. (2017). Evaluation of TRMM multi-satellite precipitation analysis (TMPA) against terrestrial measurement over a humid sub-tropical basin, India. *Theoretical and Applied Climatology*, 129(3-4): 783-799. <https://doi.org/10.1007/s00704-016-1807-9> (Q2, IF: 3.409)
- 2017 1. **Palmate, S.S.**, Pandey, A., Kumar, D., Pandey, R.P., & Mishra, S.K. (2017). Climate change impact on forest cover and vegetation in Betwa Basin, India. *Applied Water Science*, 7(1): 103-114. <https://doi.org/10.1007/s13201-014-0222-6> (IF: 5.411)

Conference (presenter*)

- 2023 18. **Palmate***, S.S., Kumar, S., Ganjegunte, G.K., Jin, L., Mauritz, M.E., Herrera, K. E., Johnson, A.S., & Hartman, J. High-resolution evapotranspiration mapping of arid pecan orchard using aerial remote sensing data. (Submitted to *ASCE EWRI2023 Congress*)
- 2023 17. Kumar*, S., **Palmate, S.S.**, Johnson, A.S., Hartman, J., Herrera, K. E., Mauritz, M.E., Ganjegunte, G.K., & Jin, L. Multiple-scale sensor and remote sensing technology to quantify abiotic carbon dioxide emission in irrigated soils of aridlands. (Submitted to *ASCE EWRI2023 Congress*)
- 2023 16. Talchabhadel*, R., **Palmate, S.S.**, & Kumar, S. Vegetation greening and browning trends in the Rio Grande – Rio Bravo basin from 2000 to 2020. (Submitted to *ASCE EWRI2023 Congress*)
- 2023 15. Johnson*, A.S., Kumar, S., Uribe, I., **Palmate, S.S.**, Aron, P., & Weiss, J. An Exploration of Nutrient Management Case Studies to Assess the Impacts of BMPs. (Submitted to *AGU 2022 Fall Meeting*)
- 2022 14. **Palmate***, S.S., Kumar, S., Johnson, A.S., Chaganti, V.S., & Ganjegunte, G.K. Hyperspectral Sensing for Monitoring changes in Arid region Canola crops under different treatments. (Submitted to *AGU 2022 Fall Meeting*)
- 2022 13. **Palmate***, S.S., Kobayashi, Y., & Kumar, S. Current Challenges of UAV-Based

- Hyperspectral Imaging in Agriculture. (*Submitted to AGU 2022 Fall Meeting*)
- 2022 12. Johnson*, A.S., Kumar, S., Aron, P., Uribe, I., **Palmate, S.S.**, & Weiss, J. An Exploration of Nutrient Management Case Studies to Assess the Impacts of Best Management Practices (BMPs). (*Submitted to AGU 2022 Fall Meeting*)
- 2022 11. Talchabhadel*, R., Kumar, S., Rhodes, E.C., **Palmate, S.S.**, & Racine, E.F. A Bayesian belief Network (BN) approach to explore the nexus between land cover changes, socioeconomic factors, and hydroclimates. (*Submitted to AGU 2022 Fall Meeting*)
- 2022 10. **Palmate*, S.S.**, Kumar, S., Talchabhadel, R., & Mokari, E. (2022). A system dynamic approach for managing transboundary water systems. *iEMSS* 11th International Congress on Environmental Modelling & Software, Brussels, Belgium, July 3-8, 2022. (*Oral Presentation*)
- 2022 9. **Palmate*, S.S.**, & Kumar, S. (2022). Wetland likelihood mapping of transboundary Himalaya using maximum entropy. *ASCE World Environmental and Water Resources Congress 2022*, Atlanta, GA, USA, June 5-8. (*Oral Presentation*)
- 2019 8. **Palmate*, S.S.**, & Pandey, A. (2019). Assessment of historical hydrologic alteration due to dam construction in upper Godavari river basin. *EGU General Assembly 2019*, Vienna, Austria, April 07–12 (Vol. 21, EGU2019-1614). <https://meetingorganizer.copernicus.org/EGU2019/EGU2019-1614-2.pdf>
- 2019 7. Dayal*, D., Swain, S., Gautam, A.K., **Palmate, S.S.**, Pandey, A., & Mishra, S.K. (2019). Development of ARIMA Model for Monthly Rainfall Forecasting over an Indian River Basin. *ASCE World Environmental and Water Resources Congress 2019*, Pittsburg, Pennsylvania, USA, pr. 264-271, May 19-23. <https://doi.org/10.1061/9780784482339.027>
- 2018 6. **Palmate*, S.S.**, Wagner, P.D., Pandey, A., & Fohrer, N. (2018). Effects of land use change on the water resources of the Basoda basin using the SWAT model. *International SWAT conference 2018*, IIT Madras, India, January 08-12. <https://swat.tamu.edu/media/115981/4-santosh-s-palmate-g2-session.pdf>
- 2018 5. Dayal*, D., Pandey, A., Himanshu, S.K., & **Palmate, S.S.** (2018). Long Term Historic Changes of Precipitation and Aridity Index over an Indian River Basin. *ASCE World Environmental and Water Resources Congress 2018*, Minneapolis, Minnesota, USA, pg. 262-272, June 3-7. <https://doi.org/10.1061/9780784481417.026>
- 2017 4. **Palmate*, S.S.**, & Pandey, A. (2017). Monitoring crop land greening and degradation using remotely sensed MODIS time-series data. *EGU General Assembly 2017*, Vienna, Austria, Vol. 19: p. 1284, April 23-28. <http://adsabs.harvard.edu/abs/2017EGUGA..19.1284S>
- 2017 3. Pandey*, A., & **Palmate, S.S.** (2017). Assessment of Land Degradation and Greening in Ken River Basin of Central India. *EGU General Assembly 2017*, Vienna, Austria, Vol. 19: p. 3846, April 23-28. <http://adsabs.harvard.edu/abs/2017EGUGA..19.3846P>
- 2016 2. **Palmate*, S.S.**, Pandey, A., Suryavanshi, S., & Himanshu, S.K. (2016). Relationship between Climate Variability and Runoff in the Betwa River Basin. *International Conference on Climate Change and Rural Development*, Dr. Babasaheb Ambedkar Marathwada University (BAMU), Aurangabad, India, January 21-23.
- 2015 1. Himanshu*, S.K., Pandey, A., & **Palmate, S.S.** (2015). Derivation of Nash Model Parameters from Geomorphological Instantaneous Unit Hydrograph for a Himalayan River using ASTER DEM. *International Conference on Structural Architectural and Civil Engineering*, U.A.E. Dubai, November, 234-239, ISBN:9788193137321. <https://pdfs.semanticscholar.org/4803/b40b206c7322dae23efd6090b0926b41e107.pdf>

Conference Session

- 2022 Session Moderator of the *ASCE EWRI Congress 2022 Technical Workshop on “Remote Sensing for Water Quality Applications”* held at Atlanta, GA, USA, on June 5, 2022.

Book Chapter(s)

- 2022 4. **Palmate, S.S.**, Amrit, K., Jadhao, V. G., Dayal, D., & Himanshu, S. K. (2022). Prioritization of erosion prone areas based on a sediment yield index for conservation treatments: A case study of the upper Tapi River basin. In *Advances in Remediation Techniques for Polluted Soils and Groundwater* (pp. 291-307). Elsevier. <https://doi.org/10.1016/B978-0-12-823830-1.00019-5>
- 2021 4. Kumar, R., Ganapathi, H., & **Palmate, S. S.** (2021). Wetlands and Water Management: Finding a Common Ground. *Water Governance and Management in India: Issues and*

- Perspectives, Volume 2, 105. https://doi.org/10.1007/978-981-16-1472-9_5
- 2021 3. **Palmate, S.S.**, & Pandey, A. (2021). Effectiveness of best management practices on dependable flows in a river basin using hydrological model SWAT. *Water Science and Technology Library (WSTL)*, Springer. Vol. 96, https://doi.org/10.1007/978-3-030-58051-3_22
- 2021 2. Pandey, A., Pyasi, R. K., & **Palmate, S.S.** (2021). Assessing Irrigation Water Requirement and its Trend for Betwa River Basin, India. *Water Science and Technology Library (WSTL)*, Springer. Vol. 96, https://doi.org/10.1007/978-3-030-58051-3_8
- 2020 1. Pandey, A., Dayal, D., **Palmate, S.S.**, Mishra, S.K., & Pandey, R.P. (2020). Long Term Historic Changes in Temperature and Potential Evapotranspiration over Betwa River Basin. *Water Science and Technology Library (WSTL)*, Vol 95. Springer, Cham. pp.267-286. https://doi.org/10.1007/978-3-030-51427-3_23

Blog Article

- 2020 1. Saluja, R., & **Palmate, S.S.** (2020). Hydrogeomorphic Approach as a Tool for Analyzing Wetlands Functional Capacity. In *Sarovar (page-26)*, *Newsletter of Wetlands International South Asia, New Delhi, India* published on World Wetlands Day 2020, Volume VI, 02nd February-2020. https://south-asia.wetlands.org/wp-content/uploads/sites/8/dlm_uploads/2020/02/Sarovar_Jan-2020_News-Letter-Final-for-Print.pdf

Manuscript(s) in progress

- (under review) • **Palmate, S.S.**, Pandey, A., Tigabu, T.B., Mercado-Bettín, D., Fohrer, N., & Wagner, P. D. Assessment of individual as well as combined impacts of land use and climate change on the water balance components and sediment yield in the Betwa River basin, India. *Environment, Development and Sustainability [Manuscript ID: ENVI-D-22-02523; June 2022]*
- (under review) • Himanshu, S.K., Pandey, A., Madolli, M.J., Palmate, S.S., Kumar, A., Patidar, N., and Yadav, B. An Ensemble Hydrologic Modelling System for Runoff and Evapotranspiration evaluation over an Agricultural Watershed. *Journal of the Indian Society of Remote Sensing [Manuscript ID: ISRS-D-22-00391; May-2022]*
- (internal review) • **Palmate, S.S.**, & Pandey, A. Assessing recent meteorological variations and associated inter-relationships for characterizing changes in climate condition of a river basin.
- (internal review) • **Palmate, S.S.**, Wagner, P. D., Pandey, A., & Fohrer, N. Evaluation of over-land and in-stream best management practices for sustainable river basin management in central India.

PROFESSIONAL ASSOCIATIONS

Memberships

- 2022- **Member** of the ASCE Task Committee – [Curve Number Hydrology](#)
- 2021- **Member** of the ASCE Task Committee – [Remote Sensing Applications for TMDL \(Total Maximum Daily Load\) Modeling](#)
- 2019 **Member (No.: 477621)** of European Geosciences Union (EGU) for the year 2019.
- 2018 **Member (No.: 962103)** of American Geophysical Union (AGU) for the year 2018.
- 2017- **Bronze Member (No.: 6571)** of International Water Resources Association (IWRA), Paris, France.
- 2016- **EWRA Member (No.: 16072401)** of European Water Resources Association (EWRA), National Technical University of Athens, Greece.
- 2016- **IAHS Member (No.: 15545)** of International Association of Hydrological Sciences (IAHS), London, UK.
- 2015- **Life Member (No.: 29597)** of Indian Association of Soil & Water Conservationists (IASWC), Dehradun, India.
- 2015- **Life Member (No.: 1875)** of Indian Association of Hydrologists (IAH), National Institute of Hydrology (NIH), Roorkee, India.
- 2012- **Life Member (No.: LM-12-7360)** of Indian Water Resources Society (IWRS), Roorkee, India.

Journal Editorial Advisory Board member

2020- The Journal of Water Engineering and Management (<http://jweam.in/>)

Guest Editor of Special Issue

2021 Special Issue “Water Quality Modelling, Monitoring and Mitigation” in Applied Sciences journal MDPI publication. (https://www.mdpi.com/journal/applsci/special_issues/water_quality_modelling_monitoring_mitigation)

Reviewer for Scientific Journals

Hydrological Sciences Journal (*1 assignment*);
 Environmental Monitoring and Assessment (*2 assignments*)
 Science of the Total Environment (*1 assignment*);
 GeoJournal (*1 assignment*);
 Chemosphere (*1 assignment*);
 Sustainable Energy Technologies and Assessments (*2 assignments*);
 Environmental Science and Pollution Research (*1 assignment*);
 Frontiers in Environmental Science (*1 assignment*);
 Environmental Challenges (*2 assignments*);
 Water – MDPI journal (*1 assignment*);
 Land – MDPI journal (*1 assignment*);
 Sustainability – MDPI journal (*1 assignment*);
 Indian Journal of Soil Conservation (*8 assignments*);

PARTICIPATED TECHNICAL PROGRAMS

Year	Date	Program	Title	Place
2022	14 th to 25 th February	Winter School	Sustainable land management and Earth Critical Zone (ECZ): a journey from ECZ characterization, modelling and Geospatial Decision Support Systems	Online program, organised by the LANDSUPPORT project (www.landsupport.eu) Organizer: Prof Fabio Terribile, University of Napoli
2021	17 th to 28 th May	Training Course	New Advances in Land Carbon Cycle Modeling	Virtual training course by Northern Arizona University, USA Course coordinator: Prof. Yiqi Luo (https://www2.nau.edu/luo-lab/?workshop)
2021	14 th April to 7 th May	Professional Online Training	Water Innovation Lab Global 2021 – Focus on Informal Settlements in Lebanon	Online event organized by Waterlution (https://waterlution.org/wil-lebanon-2021/)
2021	16 th & 17 th April	Professional Training	Modeling of water flow and contaminant transport in porous media using the HYDRUS software packages	Online HYDRUS short course by PC-Progress (https://www.emailkampane.cz/action/online.php?ca_guid=ED3073CC-43AE-F63F-48D8-51D3FB2D157A&co_guid=C62FF708-B6C1-DCB9-41E7-378AE6341126) Course instructor: Prof. Jirka Šimůnek
2021	30 th March to 6 th April	Training	Introduction to Population Grids and their Integration with Remote Sensing Data for Sustainable Development and Disaster Management	Online Applied Remote Sensing Training (ARSET) program by NASA (https://appliedsciences.nasa.gov/join-mission/training/english/arset-introduction-population-grids-and-their-integration-remote)

2020	16 th October to 10 th December	Summer School	IEE GRSS Young Professionals & ISPRS Student Consortium Summer School	Online event organized jointly in Brazil and supported by the IEE GRSS and ISPRS (http://grss-isprs.dcc.ufmg.br/)
2020	3 rd December 2020	Training	Introduction to NASA's "Black Marble" Night Lights Data	Online Applied Remote Sensing Training (ARSET) program by NASA (https://appliedsciences.nasa.gov/join-mission/training/english/arset-introduction-nasas-black-marble-night-lights-data)
2020	30 th June to 14 th July	Training	Understanding Phenology with Remote Sensing	Online Applied Remote Sensing Training (ARSET) program by NASA (https://appliedsciences.nasa.gov/join-mission/training/english/arset-understanding-phenology-remote-sensing)
2020	26 th to 28 th May	Training	An Inside Look at how NASA Measures Air Pollution	Online Applied Remote Sensing Training (ARSET) program by NASA (https://appliedsciences.nasa.gov/join-mission/training/english/arset-inside-look-how-nasa-measures-air-pollution) Trainers: Melanie Follette-Cook, Pawan Gupta & Ana Prados
2020	14 th , 21 st , 28 th April and 5 th May	Training	Satellite Remote Sensing for Agricultural Applications	Online Applied Remote Sensing Training (ARSET) program by NASA (https://appliedsciences.nasa.gov/join-mission/training/english/arset-satellite-remote-sensing-agricultural-applications) Trainers: Sean McCartney, Amita Mehta & Erika Podest
2018	13 th to 20 th February	Training	Accuracy Assessment of a Land Cover Classification	Online Applied Remote Sensing Training (ARSET) program by NASA (https://appliedsciences.nasa.gov/join-mission/training/english/arset-accuracy-assessment-land-cover-classification) Trainer: Amber McCullum
2017	1 st April to 30 th November	8-months Research stay under RSMFP-2017	River Basin Management using Remote sensing & GIS techniques	Institute of Natural Resource Conservation, Department of Hydrology and Water Resources Management, Kiel University, Germany
2016	12 th to 25 th September	International Summer Academy 2016	Spatial Ecotoxicology and Ecotoxicological Risk Assessment- Using an Open Community Approach	University of Koblenz and Landau (UKL), Germany
2016	13 th to 24 th June	Bergen Summer Research School 2016	Modeling the complexities of water, climate and society	University of Bergen (UiB), Bergen, Norway

2015	30 th March to 10 th April	Training	Climate Change Downscaling Approaches and Applications (CCDAA)	Organized by UNU at Sri Lanka Institute for Information Technology (SLIIT), Colombo, Sri Lanka
2014	26 th and 27 th December	Workshop	Hydrological modeling with SWAT & groundwater modeling with MODFLOW	Department of Civil Engineering, Indian Institute of Technology (IIT) Hyderabad, India
2012	29 th October to 2 nd November	National Workshop	Advance Soft Computing Techniques in Hydrology and its Applications	National Institute of Hydrology (NIH) Roorkee, India

EXTRA-CURRICULAR ACTIVITIES

Sports	Volleyball, badminton, cricket, basketball, table-tennis, kabaddi.
Travels	India, Sri Lanka, Norway, Denmark, Germany, Austria, Sweden, Finland, Russia, Estonia, Italy, Poland, The Netherlands, Spain, Balearic Islands
Hobbies	Collect foreign currency coins, Sketch-drawing, cooking

COMMUNITY SERVICES

Research Extension Activities

2022	Introduced thermal sensor mounted on UAV and rover in the “ Career Day ” event at the O’Shea Keleher Elementary School, El Paso, on April 27, 2022.
2022	Showcased research activities of Texas A&M AgriLife Research in the “ 7th Annual College and Career Job Expo ” event at Montwood High School, El Paso, on March 21, 2022, to interact with 10 th to 12 th grade students.
2021	Showcased importance of the aerial (drone-based) remote sensing in the “ Career Awareness Showcase ” event at the Socorro Independent School District (SISD), East El Paso, Texas, USA, on November 06, 2021.
2021	Presented the Unmanned Aerial Vehicle (UAV) based thermal, multispectral and hyperspectral sensing for precision agriculture in the “ AgTech ” technical event at Texas A&M AgriLife Research Center El Paso (Texas, USA) on July 10, 2021.

Volunteer roles

2018	Served as “ Volunteer ” in the International Conference on Sustainable Technologies for Intelligent Water Management (STIWM) at Indian Institute of Technology (IIT) Roorkee during February 16-19, 2018.
2012	Served as “ Volunteer ” in the Cognizance-2012 technical event at Indian Institute of Technology (IIT) Roorkee during March 23-25, 2012.
2009	Served as “ National Service Scheme (NSS) Volunteer ” for 7-days in the community of a village- Shirshi Budruk, Tq. & Dist. Parbhani (Maharashtra, India) during March 19-25, 2009.