Dr. MALINI ROY CHOUDHURY

CONTACT

PHONE:
+918777422935

Email:
m.roychoudhury@uq.net.au
maliniroychoudhury@gmail.com
Malini@gm.rkmvu.ac.in

ORCiD ID:
https://orcid.org/0000-0003-4775-3854

Google Scholar ID:
https://scholar.google.com/citations?hl=en&user=7Qu7oowAAAAJ

RESEARCH INTERESTS:

- Remote Sensing, Spatial modelling
- Geospatial Sciences;
- Environment, Climate, Soil
- Natural Hazard and disaster management
- Precision Agriculture;
- High-resolution UAVs and satellite data augmentation
- Crop/vegetation-Environment interactions,
- Remote Sensing and machine learning for crop stress, physiology, and yield estimations

Current Interests: High-resolution satellite and Unmanned Aerial Vehicle (UAV)-based multispectral; hyperspectral, and 3D point cloud processing and machine learning techniques in agricultural and vegetative applications, particularly, yield forecasting, soil and plant nutrient estimations, and quantification of abiotic stress

Broad Interests: Remote sensing and geospatial modelling in Land Use & Land Cover dynamics, natural resources management, agricultural water management, species ecological mapping, etc.

EDUCATION

Doctor of Philosophy (Ph.D.),
Year: 2018-2021, awarded in 2022
Full-Time, Australian Govt. International RTP Fellow,
School of Agriculture & Food Sciences, University of Queensland (QS rank 40th, globally)

M.Tech in Remote Sensing and GIS
Year: 2010-2012
Dept. of Civil Engineering
SRMIST, SRM University, Kattankulathur Campus, TamilNadu, India
Full-Time [First class with disntiction]

M.Sc. in Remote Sensing and GIS
Year: 2007-2009
Vidyasagar University, West Bengal, India
Full-Time [First Class]

B.Sc. Honours in Geography
Year: 2004-2007
University of Calcutta, West Bengal, India
Full-Time, [Second class]

Skills and Strength:

Team leader with strong patience, persistence, and sound decision-making abilities, effective in diverse teams and dynamic environments.

Excellent communication skills, enabling clear collaboration and stakeholder engagement.

Strong multi-tasking capabilities, with the ability to manage complex challenges and respond decisively during critical situations.

Brings robust research, analytical, and technical skills, contributing to innovative solutions and data-driven decision-making.

Career Objective:

To consistently contribute meaningful work and grow both professionally and personally—striving to become a skilled, good individual who never stops learning, believes in teamwork, and is committed to making a positive impact

12th Borad, Higher Secondary Examination
Year: 2004
West Bengal Council of Higher Secondary Education,
Full Time, [First Division]

10th Board, Madhyamik Examination
Year: 2002
West Bengal Board of Secondary Education,
Full-Time, [First Division]

WORK EXPERIENCE

Assistant Professor
School of Environment and Disaster Management, IRDM Faculty Centre, Narendrapur Campus, Ramakrishna Mission Vivekananda Educational and Research Institute (RKMVERI)
2024-Present

Post-doctoral Research Fellow,
School of Agriculture & Food Sciences, University of Queensland, Australia, 2021- 2023

Casual Research Assistant,
School of Agriculture and Food Sciences, University of Queensland, Australia, Year: 2019

Assistant Professor,
Dept. of Geography, Social Sciences
Amity University, Kolkata, India, Year: 2017-2018

Assistant Professor,
Geoinformatics,
Centre for Land resource management, Central University of Jharkhand, Ranchi, India, Year: 2016-2017

Assistant Professor,
Dept. of Civil Engineering,
Smt. S.R. Patel Engg. College, (Affiliated to Gujarat Technological University), India, Year: 2014-2016,

Assistant Professor,
Dept. of Civil Engineering,
Marwadi University, India, Year: 2012-2014

COURSES TAUGHT (B.E/ B.TECH/B.SC HONOURS LEVEL/M.SC AND M.TECH LEVEL)

Environmental Engineering, Hydrology & Water Resource Engineering, Water & Wastewater Engineering, Environmental Studies, Irrigation Engineering, Irrigation and Water Management, Building and Town Planning, Engineering Geology, Environmental Studies, and Elements of civil Engineering, Cartography and Surveying, Geomorphology, Regional Planning and Development, Hydrology and Ground Water studies, Ecology and Environment, Geoscience and Image Interpretation, Geoinformatics in Hydrology, and Water Resources, Geoinformatics in Natural Resource Management, Geoinformatics in Cryosphere studies, Elements of Remote Sensing, GIS, GPS,

SKILLS

Arc GIS/Arc GIS Pro	Erdas Imagine
ENVI	QGIS
Google Earth Engine	Agisoft
PIX4d	Unscrambler
R studio	Python (Jupyter Notebook)
MATLAB	SPSS, XLSTAT

PUBLICATIONS:

International peer reviewed journals / national / international conferences / seminars:

Year 2025

Maji, A. K., Das, S., Marwaha, S., Kumar, S., Dutta, S., Choudhury, M. R., Arora, A., Ray, M., Perumal, A., & Chinusamy, V. (2025). Intelligent decision support for drought stress (IDSDS): An integrated remote sensing and artificial intelligence-based pipeline for quantifying drought stress in plants. Computers and Electronics in Agriculture, 236, 110477. https://doi.org/10.1016/j.compag.2025.110477

Biswas A, Sarkar S, Das S, Dutta S, Choudhury MR, Giri A, Bera B, Bag K, Mukherjee B, Banerjee K, Gupta D.(2025). Water scarcity: A global hindrance to sustainable development and agricultural production–A critical review of the impacts and adaptation strategies. Cambridge Prisms: Water, 3, e4.

Dutta S, Sarkar R, Saha N, Suthar MK, Gawdiya S, Roy Choudhury M, Garai S, Paul D, Das S. (2025). Beyond nutrition: a two-decade systematic review of the ethnopharmacological potential and therapeutic promise of Amaranthus sp. Phytochemistry Reviews, 1-33.

Das, S., Dutta, S., Bhattacharya, S., Sadhukhan, R., Chatterjee, R., & Choudhury, M. R. (2025). Agri-tech evolution: harnessing digital

pathways for sustainable agri-food systems. Technology in Agronomy, 5(1)

Bera, M., Das, S., Dutta, S., & Roy Choudhury, M. (2025). Navigating the Future: Climate Change Impacts, Mitigation Strategies, and Adaptation Pathways in Agriculture. In Ecologically Mediated Development: Promoting Biodiversity Conservation and Food Security (pp. 419-443). Singapore: Springer Nature Singapore.

Bera, M., Das, S., Garai, S., Dutta, S., Choudhury, M. R., Tripathi, S., & Chatterjee, G. (2025). Advancing energy efficiency: innovative technologies and strategic measures for achieving net zero emissions. Carbon Footprints, 4(1)

Year 2024

Hu, Zheng, B., Chen, Q., Grunefeld, S., Choudhury, M. R., Fernandez, J., Potgieter, A., & Chapman, S. C. (2024). Estimating aboveground biomass dynamics of wheat at small spatial scale by integrating crop growth and radiative transfer models with satellite remote sensing data. Remote Sensing of Environment, 311, 114277. https://doi.org/10.1016/j.rse.2024.114277

Sumanta Das, Malini Roy Choudhury, Bhagyasree Chatterjee, Pinanki Das, Sandeep Bagri, Debashis Paul, Mahadev Bera, Suman Dutta. (2024). Unraveling the urban climate crisis: Exploring the nexus of urbanization, climate change, and their impacts on the environment and human well-being – A global perspective. AIMS Public Health, 11(3): 963-1001. doi: 10.3934/publichealth.2024050

Barman, A., Dutta, S., Bera, A., Saha, P., Roy, J., Roy Choudhury, M., ... & Das, S. (2024). Synergizing sustainability: a critical review on harnessing agroforestry for biomass, carbon sequestration, and water-food-energy nexus. Energy, Ecology and Environment, 1-35. https://doi.org/10.1007/s40974-024-00336-6

Bera, M., Das, S., Dutta, S., Nag, P.K. and Roy Choudhury, M. (2024), "Progress and challenges of bioclimatic design strategies for enhancing building environmental performance: a systematic review", Smart and Sustainable Built Environment, Vol. ahead-of-print No. ahead-of-print. https://doi.org/10.1108/SASBE-07-2024-0250

Sarkar Sourakanti, Das Sumanta, Dutta Suman, Bera Bimal, Bera Mahadev, Roy Debasish, Middya Md Mahmudul Hasan, Roy Choudhury Malini, (2024), Agricultural & Rural Studies, 2(2). https://doi.org/10.59978/ar02020008

Roy Amitava, Dutta Suman, Das Sumanta, Roy Choudhury Malini, (2024). Next-Generation Sequencing in the Development of Climate-Resilient and Stress-Responsive Crops – A Review, The Open Biotechnology Journal, 18 (1). DOI: 10.2174/0118740707301657240517063244

Year 2022:

Chapman, Scott, Noviati, Vivi, Hu, Pengcheng, McLaren, Connar, Smith, Daniel, Choudhury, Malini, Chen, Zhi, Grunfeld, Swaantje, Zheng, Bangyou, van Eeuwijk, Fred, Bustos-Korts, Daniela, Boer, Martin, Hemerik, Jesse, and Ramakers, Jip (2022). Integration of data across scales to predict genotype performance in National Variety Trials. Australasian Plant Breeding Conference. Gold Coast, QLD Australia. https://espace.library.uq.edu.au/view/UQ:cba6f61

Chapman, Scott C., Noviati, Vivi, Potgieter, Andries B., Grunfeld, Swaantje, Choudhury, Malini, McLaren Connar, Smith, Daniel, Hu, Pengcheng, James, Chrisbin, Gu, Yanyang, Eriksson, Anders, Zheng, Bangyou, van Eeuwijk, Fred, Bustos-Korts, Daniela, Ramakers, Jip, Hemerik, Jesse, de Solan, Benoit, Baret, Frederic, Madec, Simon, David, Etienne, Guo,Wei (2022). INVITA and AGFEML – Monitoring and extending the value of NVT trials. GRDC Grains Research Update Papers, pp.23-37.
https://grdc.com.au/resources-and-publications/grdc-update-papers/tab-content/grdc-update-papers/2022/02/invita-and-agfeml-monitoring-and-extending-the-value-of-nvt-trials

Roy Choudhury, M., Christopher, J., Das, S., Apan, A., Chapman, S., Menzies, N.W., Mellor, V., and Dang, Y.P., (2022). Detection of Calcium, Magnesium, and Chlorophyll variations of wheat genotypes on sodic soils using hyperspectral red edge parameters, Environmental Technology and Innovation, 27, pp. 102469. [SJR: 1.08; IF: 7.8]
https://doi.org/10.1016/j.eti.2022.102469.

Das, S., Christopher, J., Roy Choudhury, M., Apan, A., Chapman, S., Menzies, N.W., Dang, Y.P. (2022). Evaluation of drought tolerance of wheat genotypes in rain-fed sodic soil environments using high-resolution UAV remote sensing techniques, Biosystems Engineering, 217, pp. 68-82.
[SJR: 1.02; IF: 5.7]. https://doi.org/10.1016/j.biosystemseng.2022.03.004

Year 2021:

Roy Choudhury, M., Das, S., Christopher, J., Apan, A., Chapman, S., Menzies, N.W., and Dang, Y.P. (2021), Improving biomass and grain yield prediction of wheat genotypes on sodic soil using integrated high resolution multispectral, hyperspectral, 3D point cloud and machine learning techniques, Remote Sensing 13(17), 3482..
https://doi.org/10.3390/rs13173482.

Das, S., Christopher, J., Apan, A., Roy Choudhury, M., Chapman, S., Menzies, N.W., Dang, Y.P., 2021. UAV-Thermal imaging and agglomerative hierarchical clustering techniques to evaluate and rank physiological performance of wheat genotypes on sodic soil, ISPRS Journal of Photogrammetry and Remote Sensing, 173, pp. 221-237.
https://doi.org/10.1016/j.isprsjprs.2021.01.014.

Roy Choudhury, M., Mellor, V., Das, S., Christopher, J., Apan, A., Chapman, S., Menzies, N. W., and Dang, Y. P., 2021. Improving estimation of in-season crop water use and health of wheat genotypes on sodic soils using spatial interpolation techniques and multi-component metrics, Agricultural Water Management, 255, pp. 107007.
https://doi.org/10.1016/j.agwat.2021.107007.

Das, S., Christopher, J., Apan, A., Choudhury, M. R., Chapman, S., Menzies, N. W., and Dang, Y. P., 2021. Evaluation of water status of wheat genotypes to aid prediction of yield on sodic soils using UAV-thermal imaging and machine learning, Agricultural and Forest Meteorology, 307, pp. 108477.
https://doi.org/10.1016/j.agrformet.2021.108477.

Das, S., Chapman, S., Christopher, J., Choudhury, M. R., Menzies, N. W., Apan, A., and Dang, Y. P., 2021. UAV-thermal imaging: A technological breakthrough for monitoring and quantifying crop abiotic stress to help sustain productivity on sodic soils – A case review on wheat, Remote Sensing Applications: Society and Environment, 23, 100583.
https://doi.org/10.1016/j.rsase.2021.100583

Roy Choudhury, M (2021). Evaluating In-Season Crop Condition Based on Estimation of Crop Water Use on Sodic Soil, Presented in 'Soil Science Australia

and The New Zealand Society of Soil Science Program in May-June, 2021. https://www.iuss.org/media/joint_soil_science_australia_nz_society_of_soil_science_aspac_conference_draft_full_programme_31.5.pdf

Roy Choudhury, M (2021). Presented in 3rd Annual Meeting of Grain Research Development (GRDC), Australia - Soil Constraints Program – 2021, Toowoomba, Australia.

Year 2020:

Choudhury, Malini Roy, Christopher, Jack, Apan, Armando, Chapman, Scott, Menzies, Neal and Dang, Yash (2020). Integrated high-throughput phenotyping with high resolution multispectral, hyperspectral and 3D point cloud techniques for screening wheat genotypes on sodic soils. Third International Tropical Agriculture Conference (TROPAG 2019), Brisbane, Australia, 11–13 November 2019. Basel, Switzerland: MDPI.

Das, S., Christopher, J., Apan, A., Roy Choudhury, M., Chapman, S., Menzies, N.W., Dang, Y.P., 2020. UAV-thermal imaging: A robust technology to evaluate in-field crop water stress and yield variation of wheat genotypes. IEEE International India Geoscience and Remote Sensing Symposium 2020 (InGARSS 2020). IEEE, India, pp. 138-141.
IEEE. doi: 10.1109/ingarss48198.2020.9358955

Detection of calcium concentration variation of wheat genotypes grown on sodic soils using red edge spectral variables was accepted in 34th Conference on Hydrology under Earth Observations and Environmental Modelling for Agriculture and Food Security session (American Meteorological Society 100th Annual Meeting in Boston, January 15, 2020). I was not able to attend due to fund problem (the deadline for application of Travel Grant was over) and informed Conference Authority. However, it is showing online on their conference website. Authors: Malini Roy Choudhury, Armando Apan, Jack Christopher, Scott Chapman, Neal Menzies, Yash Dang
https://ams.confex.com/ams/2020Annual/meetingapp.cgi/Session/53560
https://ams.confex.com/ams/2020Annual/meetingapp.cgi/Paper/370665)

Year 2019:

Dang, Yash, Christopher, Jack, Anzooman, Monia, Choudhury, Malini Roy and Menzies, Neal (2019). Wheat varietal tolerance to sodicity with variable subsoil constraints. GRDC Grains Research Update, Goondiwindi, QLD, Australia, 5-6 March 2019. Sydney, Australia: Grains Research Development Corporation.

Dang, Yash, Christopher, Jack, Anzooman, Monia, Choudhury, Malini Roy, Apan, Armando, Dalal Ram, Menzies Neal (2019). Selecting Wheat Genotypes for Tolerance to Soil Constraints. Golden Jubilee International Salinity Conference (GJISC), organized by Indian Society of Soil Salinity and Water Quality, Karnal, Haryana, ICAR – Central Soil Salinity Research Institute, Karnal, Haryana, and Indian Council of Agricultural Research (ICAR), New Delhi, February, 2019.
https://krishi.icar.gov.in/jspui/bitstream/123456789/17019/1/Abstract-book%20Golden%20Jubilee%20International%20Salinity%20Conference.pdf

Year 2016:

Gandhi, S, Joshi, V, Das, S, and Choudhury MR (2016). Application of earth observation data and standardized precipitation index-based approach for meteorological drought monitoring and assessment over Kutch, Gujarat, India, Proceedings of National Conference on Recent Advances in Civil Engineering (RACE2016), SVNIT, Surat, India. 5 – 6 March 2016, pp. 39, ISBN: 9789385056819.

Choudhury, MR and Das, S (2016). Potential Role of Landsat Satellite Data for the Evaluation of Land Surface Temperature and Assessment of Urban Environment, Environment and Urbanization Asia, SAGE Publication, 7(1), pp.1-21, DOI: 10.1177/0975425315619721

Das S, Choudhury, M R, Gandhi, S, Joshi V (2016): Application of Earth Observation Data and Standardized Precipitation Index Based Approach for Meteorological Drought Monitoring, Assessment and Prediction Over Kutch, Gujarat, India, International Journal of Environment and Geoinformatics 3 (2), pp. 24-37

Das S, Choudhury MR, Das S, and Nagarajan M (2016): Earth observation and geospatial techniques for soil salinity and land capability assessment over Sundarbans Bay of Bengal Coast, India, Geodesy and Cartography 65 (2)

Year 2015:

Das S, Choudhury MR (2015). A comparative study between traditional method and mix design with industrial Bi-products for the testing and repairing of bituminous pavements. World J. Civ. Engin. Constr. Technol. 2(1):042-050.

Das S, Choudhury MR (2015). Effectiveness of triaxial geogrid reinforcement for the improvement of CBR strength of natural lateritic gravel soil for rigid pavements. World J. Civ. Engin. Constr. Technol. 2(2):051-056.

Das S and Choudhury MR (2015). Earth observation and assessment of land use and land cover dynamics -A case study of Guwahati city, Assam, India, Int. Journal of Environmental Sciences, Volume 5, Issue 6, pp.1061- 1077, DOI:10.6088/ijes.2014050100100

Choudhury MR and Das S. (2015). An Integrated Geo-Spatial Studies for land capability Assessment of Agricultural Field especially for Paddy cultivation (A Case Study of South 24 Parganas, West Bengal, India, Asian Journal of Geoinformatics, 15(2), pp. 22-31.

Das, S, Choudhury MR (2015). A Geo-Statistical Approach for Crime hot spot Prediction in India, Int. Journal of Advances in Remote Sensing and GIS, Vol. 3, No. 2, pp. 11-20.

Year 2014:

Das S, Choudhury MR (2014). Rock type classification by image analysis using the quaternion colour extraction model and support vector machine classifier. J. Oil Gas Coal Engin. 1(1): 002-009.

Das S, Choudhury MR, Shobhana B, Bhakhar K, Vaghela B (2014). Slum redevelopment strategy using GIS based multi-criteria system: A case study of Rajkot, Gujarat, India. World J. Civ. Engin. Constr. Technol. 1(1):012-041.

Das S, Choudhury MR (2014). An Integrated GIS and Spatial Decision Support System for Market policy, Analysis, Research and Development. International Journal of Geography and Regional Planning 1(1): 002-010.

Year 2013:

Das, S et.al (2013): "Sediment Transport and Island Change Detection: a case study from Sagar Island, West Bengal; Int. J. Geo Sci. & Tech.; ISSN- 2321-2144; Vol. 1 (1); pp. 41-62

Das, S. et.al (2013): "Monitoring Shore line and Inland changes by using Multi-Temporal Satellite Data and Risk Assessment: A case study of Ghoramara Island, West Bengal"; Int. J. Geo Sci. & Tech.; ISSN- 2321-2144; Vol. 1 (1); pp. 1-20

Das, S, Choudhury, Malini Roy, Nanda, Sachikanta (2013): Geospatial assessment of agricultural drought (a case study of Bankura district, West Bengal); International Journal of Agricultural Science and Research (IJASR); ISSN 2250- 0057, Vol. 3, Issue 1, pp.1-28

Das, S et.al (2013): Integrated Geospatial technologies for soil salinity assessment over south 24 PGS, West Bengal; Int. J. Geo Sci. & Tech.; ISSN - 2321-2144; Vol. 1 (2); pp. 41-85

Book Publication

.

Das S, Choudhury M R (2016). Slums and slum redevelopment strategy in India, Lambert Academic Press, Germany, 1-101.

AWARDS/ ACHIEVEMENTS

Received Australian Govt. International RTP award (2018) for Doctor of Philosophy program in 2018, The University of Queensland.

Received MHRD JRF at IIT, KGP for Ph.D. program (2017)

Reviewer in peer-review journals published by Elsevier, MDPI, Taylor and Francis. (GIScience and Remote Sensing, Remote Sensing, Agronomy, etc.)

Review Editor of 'Frontiers in Agricultural Economics'

MEMBERSHIP OF PROFESSIONAL BODIES:

Member of International Society for Photogrammetry and Remote Sensing.
Life member of Indian Society for Technical Education.
American Meteorological Society (AMS) student membership, 2019

PROJECT:

INVITA A technology and analytics platform for improving variety selection (Collaborator), Funded by GRDC Australia

Improving wheat yields on Sodic, Magnesic, and Dispersive soils (Collaborator). Funded by GRDC Australia

RESEARCH INTERNSHIP

June 2011-July 2011: Indian Institute of Technology, Kharagpur (Dept. of Geology and Geophysics)

PROFESSIONAL/CERTIFICATE COURSES

STEM Academic Writing Course (eight weeks), conducted by The Graduate School, The University of Queensland.

Soil Plant Relationship (LAND3005) course, conducted by The School of Agriculture Food Sciences, The University of Queensland.

R software training workshop, conducted by The University of Queensland

Digital Cartography from Institute of Geoinformatics, Kolkata in 2010.

.NET (C#.NET, VB.NET, ASP.NET, ADO.NET), Orange, TamilNadu,
Aggregate: 'A' grade (Distinction)

Other information:

Mother tongue: Bengali
Other Languages: English (Fluent), Hindi (Fluent)
Interests: Dance, Recitation, reading, and travel
Nationality: Indian
Gender: Female
Marital Status: Married

References

1.Dr. Yash Dang
Principal Research Fellow,
School of Agriculture and Food Sustainability,,
The University of Queensland,
Australia
Email: y.dang@uq.edu.au

2. Prof. Armando Apan
Professor,
Geographic Information Systems & Remote Sensing,
School of Civil Engineering and Surveying & Institute for Life Sciences and the Environment,
University of Southern Queensland,
Toowoomba, Australia
Email: armando.apan@usq.edu.au

WORKSHOP/ SEMINARS/TRAINING:

National Conference on Innovative and Emerging Technologies, NCIET-2015, SRPEC, India

Faculty Development Program on Integrated teaching and research, Marwadi University, India

Faculty Development Program on Effective teaching- learning methodology, Marwadi University, India

Faculty Development Program on Effective mentoring, Marwadi University, India

GPS awareness program at SRM University, India

OTHER ACTIVITIES IN ACADEMICS

Acted as the course coordinator, subject in-charge, lab in-charge, and class counsellor

Established Engg. Geology. Laboratory at Marwadi University

Organizing member and host of ACI India Students Chapter at Marwadi University

Organizing member and host of World Water Day, Marwadi University

Acted as the representative of the women cell of Dept. of Civil Engg., Marwadi University

Acted as the Head of the committee for the website development of Dept. of Civil Engg, Marwadi University

Designing and implementation of Rainwater Harvesting System and converting SRPEC (GTU) Campus as Green Campus with the collaboration of J.K Lakshmi Cement Company.

Member of the placement team at SRPEC (GTU) from Dept. of Civil Engg.

Started Dept. of Geography, Amity University, Kolkata and was actively involved in institute Development Activities

Established Advanced Surveying Laboratory at Amity University, Kolkata

Literary / Cultural Activities:

Organizing Secretary (coordinator) of 'XITIJ-2014', Interzonal Youth Festival, at SRPEC (GTU) and Member of Cultural Board of Gujarat Technological University (GTU) from SRPEC for one year.

Organizing Committee member of Pratibha, cultural festival in 2014, 2015, SRPEC (GTU)

Discipline Committee head from Dept. of Civil Engg., SRPEC (GTU).