



# DEBASISH MISHRA

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## CORE COMPETENCIES

Soil Science  
Hydroclimatology  
Multi-scale data fusion  
Remote Sensing  
Bayesian Statistics  
Inferential Statistics  
Multivariate Analysis  
Machine Learning

## ONLINE COURSE CERTIFICATIONS

**IEEE - High Performance and Disruptive Computing in Remote Sensing (HDCRS) Summer School 2022**

**NCAR's Trustworthy AI for Environmental Science (TAI4ES) Summer School 2022**

**NASA's Applied Remote Sensing Training Program: Monitoring and Modelling Floods using Earth Observations**

**ESRI's Training Program: Spatial Data Science- The New Frontier in Analytics**

**UN's Office for Outer Space Affairs Training Program: Geospatial Applications for Disaster Risk Management**

## EDUCATION

- Aug 2021 – Present** | **TEXAS A&M UNIVERSITY | COLLEGE STATION | TEXAS**  
Degree: Doctor of Philosophy (PhD). Major: Biological and Agricultural Engineering  
GPA: 4.0 on a 4.0-point scale
- Jul 2019 – May 2021** | **INDIAN INSTITUTE OF TECHNOLOGY | KHARAGPUR | WEST BENGAL**  
Degree: Master of Technology (M.Tech). Major: Agricultural System and Management  
GPA: 9.78 on a 10-point scale (*Silver Medalist*)
- Jul 2015 – June 2019** | **ODISHA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY | BHUBANESWAR | ODISHA**  
Degree: Bachelor of Technology. Major: Agricultural Engineering  
GPA: 8.66 on a 10-point scale

## RESEARCH EXPERIENCE

**Current Project (Pursuing)** | **NASA: SMAP Science using Data Fusion: Forecasting Flash Drought to Flash Flood | 2021 - 2024**  
Surface soil moisture (SSM) is a critical land-surface variable influencing the intensification of floods and droughts. We are trying to build a novel and computationally-efficient multi-scale multi-platform spatial data fusion framework, for predicting these extreme events as a function of soil moisture.

**International Conference** | **VIRTUAL PICO PRESENTATION | EGU GENERAL ASSEMBLY | 2021**  
Presented my abstract on Living with Arsenic in Environment, in the session – “Key issues to face polluted soils: Spatial variability assessment of soil contamination, aimed to site characterization/remediation, and circular economy towards site recovery”, held virtually on 26<sup>th</sup> April, 2021. ([DOI](#))

**Accepted in Scientific Reports** | **MASTER'S PROJECT | INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR | 2022**  
*Climate-catchment-soil control on hydrological droughts in peninsular India*  
A study carried out to declutter the effect of coupling between soil-climate-and-terrain attributes on drought stages starting from initiation to recovery. Contributed in the work by running feature selection for quantifying the contribution of different soil, climate and terrain attributes on drought stages; and in writing the corresponding findings of the manuscript.

**Accepted in Environment International** | **MASTER'S THESIS | INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR | 2020**  
*Living with arsenic in environment: An examination of current awareness of farmers in the Bengal basin using hybrid feature selection and machine learning.* Worked as the leading author of the manuscript and developed

## TRANSFERABLE SKILLS

### Coding & Statistical Skills

R & R Studio

Google Colab

Machine Learning

Data Science

Soil Spectroscopy

### Mapping Skills

Digital Soil Mapping (DSM)

ArcMap, QGIS, ENVI

Google Earth Pro

### Crop Modelling

DSSAT Software

### Communication Skills

Public Speaking

Technical Writing

## EXTRA-CURRICULAR ACTIVITIES

### Leadership

Serving as the Vice-President of GSA, TAMU (2021-present)

Served as President of Students' Union, OUAT (2018-19)

Introduced four societies in the college (2018-19)

### Society Membership

Served as NSS (National Service Scheme) volunteer

a new comprehensive arsenic awareness index and derived key awareness drivers using a novel hybrid feature selection methodology. This work forms of part of international collaborative project - [ARRNet](#).

### Un-published Dissertation

**BACHELOR'S THESIS | ODISHA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY, BHUBANESWAR | 2019**

*Water resource planning of a Watershed using Geographic Information System (GIS) & Remote Sensing (RS)*. Involved preparation of maps for developing water resource action plan for Khuntapingu micro-watershed in Odisha, India.

### National Level Presentation

**NATIONAL LEVEL STUDENTS' RESEARCH CONVENTION | CHITKARA UNIVERSITY, PUNJAB | 2018**

Conducted by Association Of Indian Universities (AIU), New Delhi. Presented my research idea on "Utilization of Animal Energy for Post-harvest operations in Rotary Mode" at national level. (Zonal Level Awardee)

## SCHOLARSHIPS & ACADEMIC ACHIEVEMENTS

### BAEN Departmental Scholarship

**GRADUATE STUDENT SCHOLARSHIP | 2022 & 2021**

Recipient of a BAEN Graduate Student Scholarship (\$1,000) for the consecutive 2022-2023, and 2021-2022 academic years.

### National Rank Holder

**GRADUATE APTITUDE TEST IN ENGINEERING (GATE) | ENTRANCE EXAMINATION | 2019**

Secured an All India Rank of 100 in 2019 GATE Entrance Examination in the Agriculture Engineering paper.

### Post-graduate Stipend

**INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR | 2019-2021**

Recipient of an annual stipend of US \$2,011 for the two year master's program at Indian Institute of Technology, Kharagpur.

### National Course Topper

**NATIONAL PROGRAMME ON TECHNOLOGY ENHANCED LEARNING | 2019**

Conducted by Ministry of Human Resource Development (Govt. of India). Course- "Organic Farming For Sustainable Agricultural Production".

### English Proficiency Test

**TEST OF ENGLISH AS A FOREIGN LANGUAGE (TOEFL) | 2021**

Overall score of 111 out of 120-point scale (Reading -27, Listening - 30, Speaking - 29, Writing - 25). Score valid till 15<sup>th</sup> Jan, 2023.

### OUAT Merit Scholarship

**ODISHA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY | 2017**

Merit Scholarship for excellent academic performance in 2016-2017.

## PROFESSIONAL & TRAINING EXPERIENCE

### SMAPVEX 2022 Volunteer

NASA SMAPVEX IOP2 (Intensive Observation Period) | Millbrook, NY | Jul 2022 - Aug 2022

### IEEE Soil Moisture School

IEEE Geoscience and Remote Sensing Society | University of Massachusetts Amherst | Jul 2022

### GIS Trainee

River Rejuvenation Project | The Art Of Living (Ngo) | Jan 2020 - Feb 2020

### Industrial Training

Northern Region Farm Machinery Training & Testing Institute (Govt. Of India Undertaking) | Hisar | Jul 2018 - Aug 2018



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