

# Debayan Mandal

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## EDUCATION

- 2021 -Ongoing      **Texas A & M University**, College Station  
• **Doctor of Philosophy** in *GEOGRAPHY*  
Advisor: Dr. Lei Zou
- 2019 -2020      **Texas A & M University**, College Station  
• **Master of Science** in *CIVIL ENGINEERING*  
Dissertation (Major Project): “**Flash Flood Screening Tool**”  
Advisor: Dr. Francisco Olivera
- 2013 -2017      **Vellore Institute of Technology**, Vellore  
• **Bachelor of Technology** in *CIVIL ENGINEERING*  
Dissertation (Major Project): “**Quantifying Predictive Uncertainty in Stream Flow Using SWAT**”  
Advisor: Dr. Roshan Karan Srivastav
- 2011 -2013      **Don Bosco School**, Bandel  
• 10+2 (*Indian School Certificate Examinations*)  
- **Council for the Indian School Certificate Examinations**  
• 10 (*Indian Certificate for Secondary Education*)  
- **Council for the Indian School Certificate Examinations**
- APPOINTMENTS**
- Student Intern, Department of Barrage and Canal Design (North, West, and South), **Central Water Commission**, Ministry of Water resources, Government of India, June-July 2015.
  - Student Technician, Department of Civil Engineering, **Texas Engineering Experiment Station**. (April-September 2019)
  - Graduate Research Assistant, Department of Geography, **Texas A&M University**. (January-May 2021)
  - Student Technician, Department of Civil Engineering, Texas Engineering Experiment Station. (June-July 2021)
  - Graduate Research Assistant, Department of Geography, **Texas A&M University**. (August-December 2021)
  - Graduate Teaching Assistant, Department of Geography, **Texas A&M University**. (January-May 2022)

**RESEARCH EXPERTISE: Civil Engineer (Water Resources Engineering); Geographer.**

## Skills and Qualifications

- Public speaking, and speechwriting
- Good written and oral communications
- Conflict resolution
- Research and analysis
- Large-scale event design and execution
- Team building and Leadership
- Good organization and prioritization skills

**Computing Skills:** ArcGIS software, STAADPro software, AutoCAD software, Ecotect software,

MATLAB software, Python language, ENVImet software, HTML, CSS, JavaScript, Node.js, MongoDB

**Languages:** Bengali (native fluency), Hindi (near-native fluency), English (advanced proficiency), German (beginner level proficiency).

**RESEARCH EXPERIENCE: Undergraduate Student**

- 2017
    - ***Quantifying Predictive Uncertainty in Stream Flow Using SWAT (Major Project)***  
iSMART Research Lab, VIT University, Vellore
      - Designed watershed models to calculate outflow and measure uncertainties in a comparative format
  - 2015
    - ***Calculation of return period of rainfall and subsequent floods in Burhi Gandak river, Bihar (Minor Project)***  
VIT University, Vellore
      - Calculated the return period of rainfall and predicted floods due to it using last 10 years data.
  - 2014-2016
    - ***Vernacular Architecture as an Idiom for Promoting Cultural Continuity in South Asia***  
VIT University, Vellore
      - Comparative study of ancient city structure of different topographical locations and application of their architecture in modern day cities.
- Graduate Student**
- 2019-2020
    - ***Flash Flood Screening Tool***  
Texas A and M University, Texas, USA
      - Developing screening GIS Tool for outlet points which would be more prone to flash flood.

**AWARDS**

- **Undergraduate Mentoring Program 2016 mentee, American Geophysical Union, Dec 2016.** (*Fifty Undergraduate Students, among those who attended the meeting, were given the opportunity to be mentored by the senior presenters from a similar field.*)
- **Second Position for Quiz during Water Conservation Week, VIT University, 2017.**
- **Featured in a book for inspiring story for budding engineers, Shape-IT (Dr. Subramani R, Ms Vijayanthi S), 2017 (ISBN: - 978-1-946869-16-6)**
- **Departmental Fellowship for Civil Engineering, in Texas A&M University, for the year 2019.**
- **Texas Public Education Grant, 2019-2020 academic year term.**
- **Departmental Fellowship for Civil Engineering, in Texas A&M University, for Spring 2021.**
- **Travel Funding (USNC) to participate in the 30<sup>th</sup> International Cartographic Conference, December 14 through 18, 2021.**

**SERVICE**

- Student Member, **Cartographic and Geographic Information Society**, 2021– 2022.
- Student Member, **American Association of Geographers**, 2021– 2022.
- Student Member, **Asia Oceania Geosciences Society**, 2017– 2019.
- Undergraduate Researcher, **iSMART Research Lab**, VIT University, 2016– 2018.
- Student Member, **American Geophysical Union**, 2016 – 17.
- Student Member, **American Society of Civil Engineers**, VIT University branch, 2014 – 2017.
- Organizer/ Coordinator, Organizing Committee, **Odessey’15 and ‘16**, VIT University, Vellore.
- Senior Editor, **Hindu Education Plus Club (Newspaper)**, School of Social Sciences and Languages, VIT University, 2015 – 16.
- Committee Member, **Academy for Future Faculty**, Texas A and M University, 2019-2020.

- Representative for Water Resources Engineering, **Civil and Environmental Engineering Graduate Students Association**, Civil Engineering Department, Texas A and M University, 2019-2020.

## OUTEACH

- Organizer/Coordinator, Organizing Committee, **Odessey'15 and '16**, VIT University, Vellore.
- Student Volunteer, **Juvenile Care**, VIT University branch, 2015 – 2016.
- Student Volunteer, **Asia Oceania Geosciences Society**, Singapore, Annual Meeting 2017.
- Student Volunteer, **Student Research Week 2019**, Texas A&M University, Texas.

## PUBLICATIONS

S.Ghosh, A. Goenka, M. Deo, **D Mandal** (2017), Vernacular Architecture as an Idiom for Promoting Cultural Continuity in South Asia, *AI & Society Journal*. (DOI 10.1007/s00146-017-0754-z)

Yang Mingzheng, Lei Zou, Heng Cai, Yi Qiang, Binbin Lin, Bing Zhou, Joynal Abedin, and **Debayan Mandal**. (2022), Spatial–Temporal Land Loss Modeling and Simulation in a Vulnerable Coast: A Case Study in Coastal Louisiana Remote Sensing 14, no. 4: 896. <https://doi.org/10.3390/rs14040896>

Binbin Lin, Lei Zou, Nick Duffield, Ali Mostafavi, Heng Cai, Bing Zhou, Jian Tao, Mingzheng Yang, **Debayan Mandal** & Joynal Abedin (2022) Revealing the linguistic and geographical disparities of public awareness to Covid-19 outbreak through social media, *International Journal of Digital Earth*, 15:1, 868-889, (DOI: 10.1080/17538947.2022.2070677)

Bing Zhou, Lei Zou, Ali Mostafavi, Binbin Lin, Mingzheng Yang, Nasir Gharaibeh, Heng Cai, Joynal Abedin, Debayan Mandal, VictimFinder: Harvesting rescue requests in disaster response from social media with BERT, *Computers, Environment and Urban Systems*, Volume 95, 2022, 101824,ISSN 0198-9715, <https://doi.org/10.1016/j.compenvurbsys.2022.101824>

## BOOK CHAPTER

N.Joseph, **D Mandal** (2018), Comparative Study of Predictive Models In Microbial Induced Corrosion, **Machine Learning and IoT: A Biological Perspective**. (ISBN:- 9781138492691; Publication Date: 19<sup>th</sup> July, 2018, Publisher: **Routledge, Taylor and Francis Group**)

## PRESENTATIONS

- **Debayan Mandal**, Nikhil Bhatia, Roshan Srivastav., “Quantifying the Uncertainty in streamflow predictions using SWAT for Brazos–Colorado coastal watershed, Texas”, **AGU Fall Meeting'16**, San Francisco, 15 December 2016.
- **Debayan Mandal**, Venkatesh B, Roshan Srivastav., “Impact of Climate Variability and Land-use changes on river flow characteristics – A case study of the San Jacinto River Basin”, **AOGS Annual Meeting'16**, Singapore, 11 August 2017.
- **Debayan Mandal**, Binbin Lin, Bing Zhou, Heng Cai, Joynal Abedin, Mingzheng Yang, Lei Zou., “Visualizing and Evaluating the Geocoding Uncertainty in Social Sensing for Disaster Management”, **International Cartographic Conference'21**, Florence, Italy 16 December 2021.
- **Debayan Mandal**, Binbin Lin, Bing Zhou, Heng Cai, Joynal Abedin, Mingzheng Yang, Lei Zou., “A modular machine learning Platform for Resilience Inference Measurement and Enhancement”, **AAG Annual Meeting'22**, Virtual, 26 February 2022.