Kaushlendra Verma

Research Scholar at IIT-Bombay, India

Date of Birth: Nov. 10, 1992

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Interests

- Remote Sensing
- Satellite Altimetry
- Hydrological Modelling
- Machine Learning

Skills

Programming:
- Python
- MATLAB
- Bash scripting

Operating System:
- Linux, Windows

Software:
- ArcGIS, ERDAS, SNAP and QGIS

Hydrological Models:
- WRF, WRF-Hydro
- SWAT+

Working Knowledge:
- High-Performance Computing
- Google Cloud Computing

Research Objective

Assessing the applicability of satellite radar altimetry over the inland freshwater bodies. Examining the error budget and uncertainties in satellite-derived hydrological variables to improve the knowledge of regional hydrology over River Basins.

Education

2018 – Ongoing — **Ph.D. in Remote Sensing** — **IIT Bombay, India**
Title: Monitoring of inland freshwater resource of India using Satellite Radar Altimetry.
Supervisor: Prof. J. Indu
Grade: CGPA: 7.64/10

2016 – 2018 — **M.Tech. in Water Resource Engineering** — **VNIT-Nagpur, India**
Title: Validation of Sensitivity of GRACE and GLDAS data to Groundwater variation within basaltic aquifer system using spatial analysis and ANN.
Supervisor: Dr. Y.B.Katpatal
Grade: CGPA: 9.26/10

2010 – 2014 — **B.Tech. in Civil Engineering** — **UPTU, India**
Title: Analysis and Design of a multi-storey buildings.
Supervisor: Mr. Shailendra Kumar Prajapati
Grade: 75.88/100%

2010 — **SSC or Intermediate in Science and Mathematics** — **UP Board, India**
Grade: 75.00/100%

2007 — **HSC or Highschool in Science and Mathematics** — **UP Board, India**
Grade: 67.3/100%

Other Training

2020 — **Community WRF-Hydro Modeling System Abridged Virtual Training** — **NCAR**
Title: First virtual abridged WRF-Hydro Training Workshop by National Center for Atmospheric Research.

2016 — **Rainwater Harvesting and Artificial Recharge** — **Ministry of W.R., India**
Title: Training on Rainwater Harvesting and Artificial Recharge Organized by Ministry of Water Resource, River development and Ganga Rejuvenation Act C.G.W.B. India.

Teaching Experience

Position as Teaching Assistant

Spring'19, 20 — **CE 712: Digital Image Processing** — **IIT Bombay**
Title: Digital Image Processing of Remotely Sensed Satellite Data Geodesy Laboratory.

Fall'20 — **CE 716: Data Processing** — **IIT Bombay**
Title: Data Processing in Remote Sensing using Python and SNAP.

Co-Curricular and Extra Curricular Activities

Short-term Courses

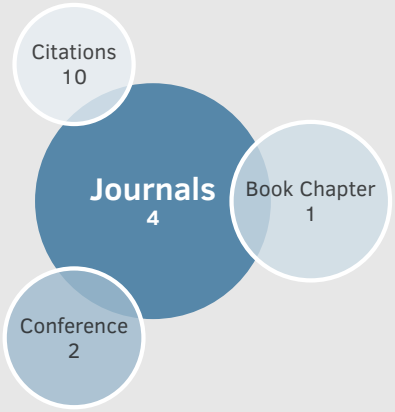
2016 — **Global Initiative of Academic Networks** — **IIT BBS**
Title: Extreme Weather and Climate Variability: Observation, Understanding and Prediction.

2016 — **Global Initiative of Academic Networks** — **IIT Madras**
Title: Hydro-informatics for Integrated Water Resource Management using SWAT-Model.

Hobbies

I do science communication through stories in my website: **TheScienceStories**. I actively participate in sports and served as hostel sport secretary of IIT Bombay. I served as hostel election commission committee 2021. Currently holding the position of Academic Unit Representative for Academic Affairs and hostel warden nominee.

Metrics



Profiles

Languages

Hindi (First Language)

English (Second Language)

Training

2021	Data Visualization and Information Design: Create a Visual Model.
2020	Community WRF-Hydro® Modeling System Abridged Virtual Training, NCAR.
2020	Training Course in Science Journalism (TCSJ), Indian Science Communication Society.

Awards and Achievements

2021	Awarded AGU Fall meeting 2021 Travel Grant.
2018-23	Awarded MHRD India Fellowship for pursuing Ph.D.
2016-18	Awarded MHRD India Fellowship for pursuing M.Tech.

International-Collaboration

NASA Early Adopters Project: SWOT Mission-2021

- My Ph.D. is the part of the project "Examining the potential of SWOT mission in Hydrometeorology over India" lead by my supervisor **Prof. J. Indu**, in the collaboration with **Dr. Stephane Calmant** (Laboratoire d'Études en Géophysique et Océanographie Spatiales LEGOS).

Publications

Journals

- **Verma K.**, Akhilesh S. Nair,Subhankar Karmakar, J. Indu and Stephane Calmant (2021). "Satellite Altimetry for Indian Reservoirs", Water Science and Engineering. https://doi.org/
- **Verma K.**, and J. Indu (2021)."Error due to infrequent temporal sampling interval of satellite altimetry in estimating reservoir storage and outflow over India",Geocarto International. 10.1080/10106049.2021.1980615.
- Akhilesh S. Nair **Verma K.**, Subimal Ghosh, Subhankar Karmakar and J. Indu (2021). "Examining SWOT Large Scale Simulator in Mahanadi basin", (*Under Review in Advances in Space Research, manuscript ID: AISR-D-21-00225*).
- **Verma, K.**, and Katpatal, Y. B. (2019). "Groundwater Monitoring Using GRACE and GLDAS Data after Downscaling Within Basaltic Aquifer System", Groundwater, 58(1), 143–151. https://doi.org/10.1111/gwat.12929.

International Conferences

- **Verma K.**, Katpatal Y.B. and C.Rishma (2018). "Performance evaluation of SWAT Model for groundwater variability analysis in Venna river basin of central India", International Conference and Workshop on Soil and Water Assessment Tool at Indian Institute of Technology Madras (ICSR).
- **Verma K.** and Katpatal Y.B. (2018). "Soil moisture variability correlation with GLDAS data using SWAT-Model output data for Upper Godavari River basin", International Conference and Workshop on Soil and Water Assessment Tool at Indian Institute of Technology Madras (ICSR).

Book Chapter

- **Verma K.** and Katpatal Y.B. (2021). "Monitoring of Soil Moisture Variability and Establishing the Correlation with Topography by Remotely Sensed GLDAS Data. In: Pandey A., Mishra S., Kansal M., Singh R., Singh V. (eds) Water Management and Water Governance. Water Science and Technology Library, vol 96. Springer, Cham.https://doi.org/10.1 3-030-58051-3$_1$0.