

ANKIT SHEKHAR

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EDUCATION

Doctorate (PhD) | ETH Zurich, Department of Environmental Systems Science

December 2019 – ongoing

Forest Vulnerability to Extreme and Repeated Climatic Stress

Master of Technology – Earth System Science and Technology | IIT Kharagpur

July 2017 – May 2019

GPA: 9.34 / 10

Bachelor of Technology – Agricultural and Food Engineering | IIT Kharagpur

July 2011 – May 2015

GPA: 7.42/ 10



RESEARCH EXPERIENCE

Research Assistant | Technical University of Munich, Germany

June 2019 – November 2019

Satellite-based measurement of CO₂ emissions from the Nile Delta (published).

Senior Research Fellowship | SRIC, IIT Kharagpur, India

November 2016 – June 2017

Groundwater Quality analysis of using GIS-based Fuzzy Logic approach (published).

Research Assistant | ETH Zurich, Switzerland

August 2015 – July 2016

Analysis of greenness and flowering phenology for trait-based experiment (Jena experiment).

Research Assistant | University of Nebraska-Lincoln, US

May 2015 – July 2015

Data analysis and field-work of a long-term (30 years) tillage experiment (published).

Research Assistant | South Dakota State University, US

May 2014 – July 2014

Landuse-Landcover analysis using Landsat 8 and Land legacy satellites.



SKILLS

- **Programming skills:** *MATLAB, R, Python and FORTRAN*
- **Software:** *ArcGIS, ERDAS, CAD*



AWARDS & ACHIEVEMENTS

- **Green Initiative Grant (50,000 INR)**, 2014 for Roof Top Agriculture Project.
- MCM (merit-cum-means) scholarship for 3 years (2012-2015) during undergraduate.

- Institute Honorable Mention in Football.
- The MHRD (Ministry of Human Resource and Development) Scholarship to pursue Masters.
- The **DAAD-IIT Sandwich Masters Scholarship** in 2018 to pursue master's thesis in Technische Universität München (TUM), Germany.



PUBLICATIONS

Journal articles

- Wable, P. S., Jha, M. K., & **Shekhar, A.** (2019). "Comparison of Drought Indices in a Semi-Arid River Basin of India." *Water resources management*. (<https://doi.org/10.1007/s11269-018-2089-z>).
- **Shekhar, A.**, & Shapiro, C. A. (2019). "What do meteorological indices tell us about a long-term tillage study?" *Soil & Tillage Research*. (<https://doi.org/10.1016/j.still.2019.06.004>).
- Jha, M. K., **Shekhar, A.***, & Jenifer, M. A. (2020). "Hybrid Approach for Assessing Groundwater Quality Using Fuzzy GIS-based Water Quality Index". *Water Research*. (<https://doi.org/10.1016/j.watres.2020.115867>).
- Castro, A. O., Chen, J., Zang, C. S., **Shekhar, A.**, Jimenez, J. C., Bhattacharjee, S., Kindu, M., Morales, V. H., & Rammig, A. (2020). "OCO-2 Solar-Induced Chlorophyll Fluorescence Variability across Ecoregions of the Amazon Basin and the Extreme Drought Effects of El Niño (2015–2016)". *Remote Sensing*. (<https://doi.org/10.3390/rs12071202>).
- **Shekhar, A.**, Chen, J., Paetzold, J. C., Dietrich, F., Zhao, X., Bhattacharjee, S., Ruisinger, V., & Wofsy, S. C. (2020). "Anthropogenic CO₂ emissions assessment of Nile Delta using XCO₂ and SIF data from OCO-2 satellite". *Environmental Research Letters*. (<https://doi.org/10.1088/1748-9326/ab9cfe>).
- Forstmaier, A., **Shekhar, A.**, & Chen, J. (2020). "Mapping of Eucalyptus in Natura 2000 Areas Using Sentinel 2 Imagery and Artificial Neural Networks". *Remote Sensing*. (<https://doi.org/10.3390/rs12142176>).
- **Shekhar, A.**, Chen, J., Bhattacharjee, S., Buras, A., Castro, A. O., Zang, C. S., & Rammig, A. (2020). "Capturing the impact of the 2018 European drought and heat across different vegetation types using OCO-2 solar-induced fluorescence". *Remote Sensing*. (<https://doi.org/10.3390/rs12193249>).
- Kawyitri, N., & **Shekhar A.** (2021) "Assessing vulnerability and capacity of Bhubaneswar as a smart-city: An empirical case study of Fani Cyclone impact on the city". *International Journal of Disaster Risk Reduction*. (<https://doi.org/10.1016/j.ijdrr.2020.101986>).
- Lal, P., **Shekhar, A.**, & Kumar, A. (2021). "Quantifying Temperature and Precipitation Change Caused by Land Cover Change: A Case Study of India Using the WRF Model". *Frontiers in Environmental Science* (<https://doi.org/10.3389/fenvs.2021.766328>)
- Gensheimer, J., Chen, J., Turner, A. J., **Shekhar, A.**, Wenzel, A., & Keutsch, F. N. (2021). "What Are the Different Measures of Mobility Telling Us About Surface Transportation CO₂ Emissions During the COVID-19 Pandemic?". *Journal of Geophysical Research: Atmospheres*. (<https://doi.org/10.1029/2021JD034664>)
- Zhou, H., Shao, J., Liu, H., Du, Z., Zhou, L., Liu, R., ..., **Shekhar, A.**, ... & Zhou, X. (2021). "Relative importance of climatic variables, soil properties and plant traits to spatial variability in net CO₂ exchange across global forests and grasslands". *Agricultural and Forest Meteorology*. (<https://doi.org/10.1016/j.agrformet.2021.108506>)

- Balamurugan, V., Chen, J., Qu, Z., Bi, X., Gensheimer, J., **Shekhar, A.**, ... & Keutsch, F. N. (2021). "Tropospheric NO₂ and O₃ Response to COVID-19 Lockdown Restrictions at the National and Urban Scales in Germany". Journal of Geophysical Research: Atmospheres. (<https://doi.org/10.1029/2021JD035440>)
- Haesen, S., Lembrechts, J. J., De Frenne, P., Lenoir, J., Aalto, J., Ashcroft, M. B., ... **Shekhar, A.**, ... & Van Meerbeek, K. (2021). "ForestTemp–Sub-canopy microclimate temperatures of European forests". Global Change Biology. (<https://doi.org/10.1111/gcb.15892>)
- Lembrechts, J. J., Hoogen, J., Aalto, J., Ashcroft, M. B., De Frenne, P., Kemppinen, J., ... **Shekhar, A.**, ... & Hik, D. S. (2022). "Global maps of soil temperature". Global change biology. (<https://doi.org/10.1111/gcb.16060>)
- **Shekhar, A.**, & Shapiro, C. A. (2022). "Prospective crop yield and income return based on a retrospective analysis of a long-term rainfed agriculture experiment in Nebraska". Agricultural Systems. (<https://doi.org/10.1016/j.agsy.2022.103384>)

Conference

- Oral Presentation: "Spring-summer variation analysis in OCO-2's Solar Induced Fluorescence during the European heatwave in 2018". **Shekhar A**, Bhattacharjee S, Chen J, Rammig A. EGU General Assembly 2019.
- Poster Presentation: "A Quarter Century of a Tillage-Rotation-Nitrogen Rate Study in Nebraska". Charles A. Shapiro; **Ankit Shekhar**. Annual Meeting of American Society of Agronomy (ASA), Crop Science Society of America (CSSA) and Soil Science Society of America (SSSA), 2015.
- Poster Presentation: "What do meteorological indices tell us about a 30-year long-term tillage study?" **A. Shekhar**, C.A. Shapiro. 2nd Agriculture and Climate Change Conference, 2017.