

Stanford



Krishna Rao

Ph.D. Student in Earth System Science

Bio

BIO

I am an Earth scientist currently pursuing my PhD. in the Remote Sensing Ecohydrology Group at Stanford University. I develop technologies to measure forest health using remote sensing and machine learning. Read more at <https://krishnakrao.github.io/>

HONORS AND AWARDS

- NASA Earth and Space Science Fellow, NASA (2018)
- J.N. Tata Fellowship, J. N. Tata endowment (2016)
- K.C. Mahindra Fellowship, K.C. Mahindra Educational Trust (2016)
- Institute Blues, Indian Institute of Technology Madras (2014)
- Larsen & Toubro ECC Endowment Fellow, Indian Institute of Technology Madras (2014)

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

- Chair, Talk of the Farm Speaking Club (2020 - present)
- President, Hindu Students Association (2018 - 2019)
- Vice-president of Education, Stanford Toastmasters (2017 - 2018)

EDUCATION AND CERTIFICATIONS

- Master of Science, Stanford University , Civil and Environmental Engineering (2018)
- Bachelor of Technology, Indian Institute of Technology Madras , Civil Engineering (2014)

PERSONAL INTERESTS

In my free time I ride my bicycle to remote areas and write about my experiences here <https://medium.com/@kkrao>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

My research focuses on developing machine learning algorithms to remotely monitor vegetation health by using microwave remote sensing. I am interested in answering questions such as:

- How can we leverage the vast amounts of data our satellites are capturing to understand the health of our forests?
- How can we obtain information about hydraulic health of vegetation with little or no ground-collected data

PROJECTS

- Effects of heterogeneity on group behaviour - Ouellette Lab, Stanford University (October 10, 2016 - March 31, 2017)
- Remotely Sensed Vegetation Optical Depth as an Indicator of Drought-driven Tree Mortality - Stanford University (April 1, 2017 - July 30, 2018)
- A nonparametric approach for estimating high-resolution fuel moisture content across the Western United States using synthetic aperture radar - Stanford University (July 31, 2018 - present)

LAB AFFILIATIONS

- Alexandra Konings, Remote Sensing Ecohydrology Group (4/14/2017)

Professional

WORK EXPERIENCE

- Wireline Field Engineer - Schlumberger (11/16/2014 - 6/1/2016)

Publications

PUBLICATIONS

- **SAR-enhanced mapping of live fuel moisture content** *REMOTE SENSING OF ENVIRONMENT*
Rao, K., Williams, A., Flefil, J., Konings, A. G.
2020; 245
- **Satellite-based vegetation optical depth as an indicator of drought-driven tree mortality** *REMOTE SENSING OF ENVIRONMENT*
Rao, K., Anderegg, W. L., Sala, A., Martinez-Vilalta, J., Konings, A. G.
2019; 227: 125–36
- **Macro to micro: microwave remote sensing of plant water content for physiology and ecology** *NEW PHYTOLOGIST*
Konings, A. G., Rao, K., Steele-Dunne, S. C.
2019; 223: 1166-1172

PRESENTATIONS

- Remotely Sensed Vegetation Optical Depth as an Indicator of Drought-driven Tree Mortality - American Geophysical Union Fall Conference (December 11, 2017)