ADITHI R. UPADHYA

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SUMMARY

Geoinformatics graduate with an interdisciplinary research background. Enthusiastic R, C++, and Python developer. Worked on mobile monitoring of air quality in Bangalore. Current role: Geospatial Data Analyst at ILK Labs. Interested in machine learning, artificial intelligence, environmental issues, and spatial science.

EDUCATION

Master of Science in Geoinformatics (MSc.)
Bharati Vidyapeeth Institute of Environment Education and Research, Pune, India, CGPA 8.96/10 — *Aug 2018*

Bachelor of Science in Physics (Honors) — *Apr 2016*
Sri Sathya Sai Institute of Higher Learning, Anantapur, India CGPA 8.5/10

RESEARCH and PROFESSIONAL EXPERIENCE

Co-Instructor (Teaching Experience), Bangalore, India — 2022
Center for Study of Science, Technology, and Policy (CSTEP)

- Co-instructed ***Introduction to R*** to the research staff for over a period of 3 months.

Air Quality, Bangalore, India — 2018 - Present
Data Scientist, ILK Labs

- Assisted in designing and implementing mobile monitoring of air quality to generate high-resolution maps. (Project Partners: University of Washington, Seattle; University of California, Berkeley, Google)
- Built web-based open-source tools to clean, correct and analyze the data.
- Generated high-resolution long-term pollutant maps using Monte Carlo subsampling.
- Building Land Use Regression models to predict air pollutants.
- Applied machine learning models to low-cost air quality sensor network data.

Cohort Study and Instructor (Teaching Experience), Chennai, India — 2021 - Present
Consultant, Sri Ramachandra Institute of Higher Education and Research

- Project: Assessing the role of LPG coverage at scale to achieve household air pollution and ambient air pollution exposure reductions using hyper-low-cost PM2.5 sensor network: Implications for the Pradhan Mantri Ujjawala Yojana program in India. Modeling and calibrating data collected by the hyper-low-cost PM2.5 sensor network.
- Instructor of ***Introduction to R*** for the research staff of Sri Ramachandra Institute of Higher Education and Research for over a period of 4 months.

Wildlife Conservation, Bangalore, India — 2020 - 2021
Consultant, Asian Nature Conservation Foundation

- Mapping and monitoring Elephant distribution based on land use, elevation, and identifying the elephant attacked regions in Karnataka state. Part of the team producing the Elephant Atlas for the state.
- Assisted in wildlife crime investigation of ivory trafficking.
- Analysing data collected for the elephant barrier across the state of Karnataka, to understand the condition.

Air quality personal exposure, Delhi, India
2019
Consultant, The New York Times

- Consulted on an awarding winning story on PM2.5 personal exposure in Delhi neighbourhoods.

Glacier Studies, Goa, India — (6 months) 2018
Intern, National Center for Polar and Ocean Research

- Estimated velocity using optical and microwave remote sensing for one of the most dynamic ice shelves in the East Antarctic region- the Amery Ice shelf system. Estimated velocity from 2001 to 2018 using DEM-assisted co-registration pixel-offset-tracking (using SAR images) and optical feature tracking.
- Observed the effect of Blue Ice Areas and Elevation and Melt duration on the estimated velocity.

Master's Thesis and Wai Technologies, Pune, India (6 months) 2017
Student, Bharati Vidyapeeth Institute of Environment Education and Research

- Designed a user-friendly, interactive, web based geographic information system for real-time auditing of ground-based assets using C#, MSSQL and JavaScript called Asset Connect.
- Methodology consisted of a five-phase approach which included data modeling of masters and transactions, spatial analysis of assets using a comprehensive system, tracking the history of assets, costing, and reporting to provide an advanced decision support system.
- Interned at WAi Technologies to assist in designing and creating a simple android application to collect user information for software built by the core team.

Land use land cover change, Pune, India (3 months) 2017
Intern, Tata Power Limited

- Determined Land use Land cover of Mulshi Catchment area. Performed segmentation on very high-resolution images using eCognition software, ArcGIS, and techniques of visual interpretation was used for classification.

VOLUNTEER NON-PROFIT EXPERIENCE 2020 - Present

- Peer reviewer for Journal of Open Source Software and rOpenSci
- Founder and Co-organiser of R-Ladies Bangalore and co-founder of AsiaR.
- In Global organising team for Sponsorship, Program and Content team and part of Code of Conduct Response team for the useR! 2021 global, and volunteer for useR! 2022.
- Co-hosted a live Q and A session - Teaching for rstudio::global(2021), chair for a Keynote at useR! 2021

AWARDS and HONORS

- RStudio Certified Tidyverse Instructor – 2022
- rstudio::global(2021) Diversity Scholar, 2021
- R@IISA Conference Travel Award, 2019
- Primer in Methods and Ecological Research (PRiMER) Sponsored by ILK Labs, 2019
- For undergraduate degree at Sri Sathya Sai Institute of Higher Learning received Gold Medal, 2016

SOFTWARE PACKAGES

Developer and maintainer of mmaqshiny, pollucheck (R packages), and maintainer of ropenaq.

SELECTED PRESENTATION and PUBLICATIONS

Kushwaha, M., Sreekanth, V., **Upadhya, A. R.**, Agrawal, P., Apte, J. S., & Marshall, J. D. (2022). Bias in PM2. 5 measurements using collocated reference-grade and optical instruments. *Environmental Monitoring and Assessment*, *194*(9), 1-14.

Joo, R., Sánchez-Tapia, A., Mortara, S., Bellini Saibene, Y., Turner, H., Hug Peter, D., ... & Ravi, J. (2022). Ten simple rules to host an inclusive conference. *PLoS computational biology*, *18*(7), e1010164.

Upadhya, A.R., Kushwaha, M., Agrawal, P., user! 2022 Tutorial on Introduction to spatial data analysis in R

Kulkarni, P., Sreekanth, V., **Upadhya, A. R.**, & Gautam, H. C. (2022). Which model to choose? Performance comparison of statistical and machine learning models in predicting PM2. 5 from high-resolution satellite aerosol optical depth. Atmospheric Environment, 119164.

Puttaswamy, N., Sreekanth, V., Pillarisetti, A., **Upadhya, A. R.**, Saidam, S., Veerappan, B., ... & Balakrishnan, K. (2022). Indoor and Ambient Air Pollution in Chennai, India during COVID-19 Lockdown: An Affordable Sensors Study. *Aerosol and Air Quality Research*, *22*(1), 210170.

Upadhya, A. R., Agrawal, P., Vakacherla, S., & Kushwaha, M. (2021). pollucheck v1. 0: A package to explore open-source air pollution data. Journal of Open Source Software, 6(63), 3435.

Spandana, B., Rao, S. S., **Upadhya, A. R**., Kulkarni, P., & Sreekanth, V. (2021). PM2. 5/PM10 ratio characteristics over urban sites of India. Advances in Space Research, 67(10), 3134-3146.

Sreekanth, V., Kushwaha, M., Kulkarni, P., **Upadhya, A. R**., Spandana, B., & Prabhu, V. (2021). Impact of COVID-19 lockdown on the fine particulate matter concentration levels: Results from Bengaluru megacity, India. Advances in Space Research, 67(7), 2140-2150.

Upadhya, A. R., Agrawal, P., Vakacherla, S., & Kushwaha, M. (2020). mmaqshiny v1. 0: R-Shiny package to explore Air-Quality Mobile-Monitoring data. Journal of Open Source Software, 5(50), 2250.