ASST. PROF. AZAD RASUL

Department of Geography, Soran University Soran, Erbil, 44008, Iraq +9647507358574 azad.rasul@soran.edu.iq

SUMMARY

Expert in Remote Sensing and GIS with over 17 years of experience. Developed four innovative remote sensing indices and published high-impact research in journals like Lancet. Seeking a research-focused role to advance the field of remote sensing, GIS, and climate studies.

PROFESSIONAL EXPERIENCE

Soran University, Soran, Erbil, Iraq

Assistant Professor of Remote Sensing and GIS, Mar 2010 – Present

- Revamped the lectures and syllabus in the department, resulting in increased student engagement and improved learning outcomes.
- Taught postgraduate and undergraduate courses in Geospatial Artificial Intelligence, Applied Programming in Remote Sensing, Remote Sensing, Climate, Natural Resources and Applied Climatology.
- Supervised ongoing PhD projects (2 monitoring and harvesting water), completed PhD (2 agriculture and drought monitoring) and completed Master projects (3 about precipitation, temperature and water).
- Developed the Soil Moisture and Evapotranspiration Revealed Drought Index.

E-learning Instructor Udemy | 2020 Dec-Present

- Python for Scientific Research.
- How to Use R Programming for Research?
- My courses have been a hit with over 67,000 students from 169 countries enrolled in my programs.

University of Leicester and Copernicus Global Land Service

Project Assistant (part-time), Nov 2016 - Mar 2020

- Assessed the quality of a global burned area product.
- Handled data, coded in Google Earth Engine, and wrote technical reports.

University of Leicester

PhD Student Researcher, Sep 2013 - Dec 2016

- Developed three remote sensing indices (Dry Built-up Index, Dry Bare-soil Index, Normalized Ratio Scale)
- Published four papers from my thesis in high-impact journals.

EDUCATION

University of Leicester

Leicester, UK

Doctor of Philosophy (Ph.D.) Remote Sensing and Geography (Sep 2016)

- **Relevant Coursework:** Remote Sensing, GIS, R Programming

Luhansk Taras Shevchenko National University

Luhansk, Ukraine

Master in Geography - Climate (Jun 2009)

- **Relevant Coursework:** Using computer technology in scientific and educational activities, Thematic cartography and computer map manufacture, Natural resources use and preservation.

Salahaddin University

Erbil, Iraq

Bachelor of Arts (B.A.) Geography (Jul 2000)

- **Relevant Coursework:** Geographical statistics, Cartography, Remote sensing, Agricultural geography

HONORS AND AWARDS

- **HCDP PhD Scholarship**

Full scholarship awarded by the Ministry of Higher Education and Scientific Research - KRG - Iraq in October 2012.

- **Acknowledgment and appreciation**

Recognized by the President of Soran University for outstanding academic performance in 2020, 2021, 2022, and 2023.

- **Editorial Board Member**

BMC Environmental Science (Oct 2023).

SKILLS

- Languages: English, Arabic, Russian and Kurdish.
- Advanced skills using Google Earth Engine, ENVI, QGIS, GeoServer, ArcGIS, Python (including the development of the "pylst" Python package), and R.
- Strong analytical skills and problem-solving abilities in the field of work
- Excellent skills in producing well-structured technical documents and operational procedures
- Demonstrated analytical and creative problem-solving skills
- Excellent analytical skills and cross-functional thinking
- Process validation: Performing validation for automated production process and being proactive in suggesting better, more efficient alternate solutions
- Personal Website: SmartRS Blog

LICENCES AND CERTIFICATIONS

- What Is Generative AI?, Udemy, Sep 2023
- AI Fundamentals for Non-Data Scientists, Coursera, Sep 2023
- Effective Time Management for Professionals, Udemy, Dec 2022
- Postgraduate Diploma: Project Management, The Retail Banking School, Dec 2022
- Data Analysis with Python, freeCodeCamp, Feb 2023
- Scientific Computing with Python, freeCodeCamp, Jan 2023
- Learn to Code in Python 3: Programming beginner to advanced, Udemy, Apr 2022
- Remote Sensing of Coastal Ecosystems, NASA’s Applied Remote Sensing Training Program, Oct 2020

- Understanding Phenology with Remote Sensing, NASA's ARSET, Aug 2020
- Using Earth Observations to Monitor Water Budgets for River Basin Management, NASA ARSET, Aug 2020
- 2nd ESA Advanced Training Course on Atmospheric Remote Sensing, European Space Agency, Oct 2014
- Forest Mapping and Monitoring with SAR Data, NASA's ARSET, May 2020
- Learning Strategies and Skills for an Easy Life, Udemy, Apr 2024
- The Ultimate Guide to Online Teaching, Udemy, Apr 2024
- Train the Trainer: How to Be a Trainer in the Training Biz, Udemy, Apr 2024
- Learn Machine Learning and AI, Udemy, Apr 2024
- The Python Programming A-Z Definitive Diploma, Udemy, Apr 2024
- TESOL and TPRS Course (For Language Teacher), Udemy, Apr 2024
- The Python Programming For Everyone Immersive Training, Udemy, Apr 2024
- WordPress for Absolute Beginners, Udemy, Apr 2024
- Pandas For Beginners, Udemy, Apr 2024
- The Complete Brain Training Course - Neuroplasticity, Udemy, Apr 2024
- Mastering Course Creation for Non-Native English Speakers, Udemy, 2024
- Committee Member of ICGMRS 2023, AEIC, Apr 2023
- Data Visualization, freeCodeCamp, Mar 2023
- Front End Development Libraries, freeCodeCamp, Mar 2023
- JavaScript Algorithms and Data Structures, freeCodeCamp, Feb 2023
- Data Analysis with Python, freeCodeCamp, Feb 2023
- Responsive Web Design, freeCodeCamp, Jan 2023
- Master Your Priorities - Get More Done In Less Time, Udemy, Jan 2023
- PowerPoint Overclocked | Complete Animation Design Bootcamp, Udemy, Jan 2023
- The Complete Personal Networking Course: Networking Mastery, Udemy, Jan 2023
- Office Administration Management, Udemy, Jan 2023
- Gmail Productivity - Become An Email Wizard!, Udemy, Dec 2022
- Your WORDS, Powerful Tools, Udemy, Dec 2022
- Python and Flask Framework Complete Course for Beginners, Udemy, Dec 2022
- Time Management Public Speaking - Drastically Reduce Prep, Udemy, Dec 2022
- Management Consulting Skills Mastery, Udemy, Dec 2022
- Monitoring and Modeling Floods using Earth Observation, NASA - ARSET, Sep 2022
- Humanitarian Applications Using NASA Earth Observations, NASA - ARSET, Jun 2022
- Earth Observation Toolkit for Sustainable Cities and Human Settlements, NASA - ARSET, Feb 2022
- Master the BASICS of GOOGLE Sheets: For Beginners, Udemy, Mar 2022
- MODIS to VIIRS Transition for Air Quality Applications, NASA - ARSET, Oct 2020Forest Mapping and Monitoring with SAR Data, NASA's ARSET, May 2020

CONFERENCES

- RSPSoc 2020 Virtual Conference 'Measure the World', September 2020.
- Climatological, Meteorological and Environmental factors in the COVID-19 Pandemic, Virtual Symposium organized by World Meteorological Organization, August 2020.

- The first conference on current state of research and applications of GIS and remote sensing, Soran University, Iraq, October 2019
- RSPSoc Annual Conference, Nottingham, UK, September 2016
- 9th International Conference on Urban Climate, Toulouse, France, July 2015

PROFESSIONAL MEMBERSHIPS

- GBD Collaborator at Institute for Health Metrics and Evaluation - University of Washington.
- International Society for Photogrammetry and Remote Sensing.
- American Society of Photogrammetry and Remote Sensing.
- International Association for Urban Climate.

PUBLICATIONS

I am proud to have published over 60 research articles in prestigious journals such as Lancet (**98.4 I.F.**), Lancet Public Health (**50 I.F.**), Lancet Infectious Diseases (**56.3 I.F.**), Urban Climate (**6.4 I.F.**), and Environment, Development and Sustainability (**4.9 I.F.**). These publications demonstrate my ability to conduct high-quality research and make meaningful contributions to my field.

1. GR Faqe Ibrahim, BO Khzr, A **Rasul** et al., 2024, "A GIS-Based Method for Identifying Rainwater Harvesting: A Case Study of Sulaimanyah Governorate, Iraq", Journal of Water Resources Planning and Management. https://doi.org/10.1061/JWRMD5.WRENG-6124
2. GBD 2021 Demographic Collaborations, **Rasul**, 2024, "Global age-sex-specific mortality, life expectancy, and population estimates in 204 countries and territories and 811 subnational locations, 1950–2021, and the impact of the COVID-19 pandemic: a comprehensive demographic analysis for the Global Burden of Disease Study 2021", Lancet. https://doi.org/10.1016/S0140-6736(24)00476-8
3. GBD 2021 Forecasting Collaborates, **Rasul**, 2024, "Burden of disease scenarios for 204 countries and territories, 2022–2050: a forecasting analysis for the Global Burden of Disease Study 2021", Lancet. https://doi.org/10.1016/S0140-6736(24)00685-8
4. GBD 2021 Fertility and Forecasting Collaborates, **Rasul**, 2024, "Global fertility in 204 countries and territories, 1950–2021, with forecasts to 2100: a comprehensive demographic analysis for the Global Burden of Disease Study 2021", Lancet. https://doi.org/10.1016/S0140-6736(24)00550-6
5. GBD 2021 Causes of Death Collaborates, **Rasul**, 2024, "Global burden of 288 causes of death and life expectancy decomposition in 204 countries and territories and 811 subnational locations, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021", Lancet. https://doi.org/10.1016/S0140-6736(24)00367-2
6. GBD 2019 North Africa and the Middle East Air Pollution Collaborators, **Rasul**, 2023, "Effect of air pollution on disease burden, mortality, and life expectancy in North Africa and the Middle East: a systematic analysis for the Global Burden of Disease Study 2019", Lancet Planetary Health. https://doi.org/10.1016/S2542-5196(23)00053-0
7. GA Mensah, V Fuster, CJL Murray, GA Roth, Rasul et al., 2023, "Global Burden of Cardiovascular Diseases and Risks, 1990-2022", Journal of the American College of Cardiology. https://doi.org/10.1016/j.jacc.2023.11.007
8. Ibrahim, **Rasul**, Abdullah, 2023, "Improving Crop Classification Accuracy with Integrated Sentinel-1 and Sentinel-2 Data: a Case Study of Barley and Wheat", Journal of Geovisualization and Spatial Analysis. https://doi.org/10.1007/s41651-023-00152-2
9. Ibrahim, **Rasul**, Abdullah, 2023, "Sentinel-2 accurately estimated wheat yield in a semi-arid region compared with Landsat 8", International Journal of Remote Sensing. https://doi.org/10.1080/01431161.2023.2232542
10. Omer, **Rasul**, 2023, "Assessing hydrological modeling approaches: a review of the soil conservation service curve number and the soil and water assessment tool", Advanced GIS.
11. Omer, **Rasul**, Ali, 2023, "Assessment of Surface Runoff and Suitability for Rain Water Harvesting in the Greater Zab Basin Using the NRCS-CN and AHP Methods", Polytechnic Journal of Humanities and Social Sciences. https://doi.org/10.25156/ptjhss.v4n2y2023.pp695-703
12. GBD 2019 Antimicrobial Resistance Collaborators, **Rasul,** 2022, **"**Global mortality associated with 33 bacterial pathogens in 2019: a systematic analysis for the Global Burden of Disease Study 2019", Lancet. https://doi.org/10.1016/S0140-6736(22)02185-7
13. GBD 2019 LRI Collaborators, **Rasul,** 2022, **"**Age–sex differences in the global burden of lower respiratory infections and risk factors, 1990–2019: results from the Global Burden of Disease Study 2019", Lancet Infectious Diseases. https://doi.org/10.1016/S1473-3099(22)00510-2
14. Peden; **Rasul**; GBD 2019 Adolescent Transport and Unintentional Injuries Collaborators, 2022, "Adolescent transport and unintentional injuries: a systematic analysis using the Global Burden of Disease Study 2019", Lancet Public Health. https://doi.org/10.1016/S2468-2667(22)00134-7

15. Hamarash; Hamad; **Rasul**, 2022, “Meteorological drought in semi-arid regions: A case study of Iran”, Journal of Arid Land. https://doi.org/10.1007/s40333-022-0106-9
16. Rasul; Ibrahim, 2022, “Spatial interaction between weather and socio-demographic factor as influencing variables for COVID-19 spread in Iraq”, Spatial Information Research. https://doi.org/10.1007/s41324-022-00497-8
17. **Rasul**; Balzter, 2022, “The Role of Climate in the Spread of COVID-19 in Different Latitudes across the World”, COVID. https://doi.org/10.3390/covid2090085
18. Hamadamin, Omer, Rasul, 2022, “Experimental Study of Ambient Air Quality Assessment During Oil Well Drilling”, Aerosol Science and Engineering. https://doi.org/10.1007/s41810-022-00145-6
19. Ningthoujam; Prestes; Andrade; Carniello; Coetsee; Harrison; Kusin; **Rasul**; Hoscilo; Oliveras; Feldpausch; Page; Bloomfield; Harrison; Prentice, 2022, “Remote sensing of tropical vegetation properties in response to fire return time”, EGU22-6549. https://doi.org/10.5194/egusphere-egu22-6549
20. Al-Hajj; ... GBD 2019 Collaborators, 2022, “Injury burden in individuals aged 50 years or older in the Eastern Mediterranean region, 1990–2019: a systematic analysis from the Global Burden of Disease Study 2019”, The Lancet Healthy Longevity. https://doi.org/10.1016/S2666-7568(22)00038-1
21. Khwarahm; Ararat; HamadAmin; Najmaddin; **Rasul**; Qader, 2022, “Spatial distribution modeling of the wild boar (Sus scrofa) under current and future climate conditions in Iraq”, Biologia, 777(2). https://doi.org/10.1007/s11756-021-00936-1
22. Traore; Lee; **Rasul;** Balew, 2021, “Assessment of land use/land cover changes and their impacts on land surface temperature in Bangui (the capital of Central African Republic)”, Environmental Challenges, 4, https://doi.org/10.1016/j.envc.2021.100114
23. **Rasul**; Ningthoujam**,** 2021, “Snow cover and vegetation greenness with leaf water content control the global land surface temperature”, Environment, Development and Sustainability. https://doi.org/10.1007/s10668-021-01269-4
24. Mahmood; Khzr; Othman; **Rasul**; Ali; Ibrahim, 2021, "Optimal Site Selection for Landfill Using Boolean-Analytical Hierarchy Process (Case Study: Erbil Governorate – Iraq)", Environmental Earth Sciences. https://doi.org/10.1007/s12665-021-09501-0
25. Adamu; **Rasul**; Whanda; Headboy; Muhammed; Maiha, 2021, “Evaluating the accuracy of Spectral Indices from Sentinel-2 Data for Estimating Forest Biomass in Urban Areas of the Tropical Savanna”, Remote Sensing Applications: Society and Environment. https://doi.org/10.1016/j.rsase.2021.100484
26. **Rasul**; Ibrahim; Onojeghuo; Balzter, 2020, “A Trend Analysis of Leaf Area Index and Land Surface Temperature and Their Relationship from Global to Local Scale”, Land. https://doi.org/10.3390/land9100388
27. **Rasul**; Ibrahim; Hamid; Tansey, 2020, “A trend of increasing burned areas in Iraq from 2001 to 2019”, Environment, Development and Sustainability. https://doi.org/10.1007/s10668-020-00842-7
28. Ibrahim; Hamid; Darwesh; **Rasul,** 2020, “A GIS-based Boolean logic-analytical hierarchy process for solar power plant (case study: Erbil Governorate—Iraq)”, Environment, Development and Sustainability. https://doi.org/10.1007/s10668-020-00862-3
29. **Rasul**; Omar, 2020, "Land surface temperature anomalies detected for some strong earthquakes in 2018", ARO, 8 (2), 15-21. https://doi.org/10.14500/aro.10591
30. Hameed; Ibrahim; **Rasul,** 2020, “Effects of Land Cover Change on Surface Runoff Using GIS and Remote Sensing: a Case Study Duhok Sub-Basin", in: Environmental Remote Sensing and GIS in Iraq. https://doi.org/10.1007/978-3-030-21344-2_9
31. Tansey; **Rasul**; Ibrahim, 2020, “Scientific Quality Evaluation Report 2019 Burned Areas 300m V1”, Copernicus Global Land Operations. https://land.copernicus.eu/global/sites/cgls.vito.be/files/products/CGLOPS1_SQE2017-2018_BA300m-V1_I1.10.pdf
32. Ibrahim; **Rasul**; Hamid; Ali; Dewana, 2019, “Suitable Site Selection for Rainwater Harvesting and Storage Case Study Using Dohuk Governorate”, Water, 11(4), https://doi.org/10.3390/w11040864
33. **Rasul,** 2019, “An investigation into the location of the crashed aircraft through the use of free satellite images”, Journal of Photogrammetry Remote Sensing and Geoinformation Science, Volume 87, Issue 3, pp 119–122. http://dx.doi.org/10.1007/s41064-019-00074-z
34. **Rasul**; Dewana; Saed, 2019**,** “Multi-model tourist forecasting: a case study Kurdistan Region of Iraq”, Tourism and Travelling, 2(1). http://dx.doi.org/10.21511/tt.2(1).2019.04
35. Saed; Faqe; **Rasul**, 2019, “Water quality effects on Kidney Dieses in the slums area of Erbil City, Iraq”, International Journal of Geography and Geography Education, 40. https://doi.org/10.32003/iggei.523583
36. **Rasul**; Balzter; Ibrahim; Hameed; Wheeler; Adamu; Ibrahim; Najmaddin, 2018, “Applying Built-Up and Bare-Soil Indices from Landsat 8 to Cities in Dry Climates”, Land, 7(3), 81. https://doi.org/10.3390/land7030081
37. **Rasul**; Balzter; Smith; Remedios; Adamu; Sobrino; Srivanit; Weng, 2017, "A review on remote sensing of urban heat and cool islands", Land, 6(2), 38. https://doi.org/10.3390/land6020038
38. **Rasul**; Balzter; Smith, 2017, “Applying a normalized ratio scale technique to assess influences of urban expansion on land surface temperature of the semi-arid city of Erbil.”, International Journal of Remote Sensing, 38. http://dx.doi.org/10.1080/01431161.2017.1312030
39. **Rasul**; Balzter; Smith, 2016, “Diurnal and Seasonal Variation of Surface Urban Cool and Heat Islands in the Semi-Arid City of Erbil, Iraq”, Climate. https://doi.org/10.3390/cli4030042
40. **Rasul**; Balzter; Smith, 2015, “Spatial Variation of the Daytime Surface Urban Cool Island During the Dry Season in Erbil, Iraqi Kurdistan, from Landsat 8”, Urban Climate. http://dx.doi.org/10.1016/j.uclim.2015.09.001