

AMIT SINGH

TEACHING / RESEARCH INTERESTS To undertake teaching and research work involving Socio-Environmental Impact Assessment of Developmental Projects; Life Cycle Assessment; Natural Resource Management; Environmental Management Strategies – Planning & Implementation, Surface and Groundwater Hydrology; Developing Drought Resilience; Climate Change Impacts – Risk Assessment, Adaptation and Mitigation Strategies; Geospatial Technology Applications and Data Analytics

WORK HISTORY Guest Faculty in TERI School of Advanced Studies, New Delhi

July 2019 – Continuing, Feb – May 2018, Jan – May 2016, Jan – May 2015

Subjects – Integrated Impact Assessment; Water Conservation; Hydrology; Climate Change and Water (Total Credits: 16)

Guest Faculty in School of Vocational Studies and Applied Sciences, Gautam Buddha University (GBU), Greater Noida

Aug 2013 – May 2018 (Total Credits: 85)

Subjects - Environmental Impact Assessment and Sustainable Development; Environmental Economics, Policies, Conventions & Legislation; Statistical Methods & Introduction to Environmental Modelling; Hydrology; Earth Resources & Processes; Soil Science; Remote Sensing & GIS

Research Assistant in United Nations University Funded Project 'Low Carbon Urban Water Environment', Central University of Rajasthan

Dec 2015 – Mar 2016

JRF in Department of Science and Technology (DST), India Funded Project 'Assessment of Tectonic Implications on Groundwater in vicinity of Faridabad & Ghaziabad faults across River Yamuna', Jawaharlal Nehru University (JNU)

July 2013 – Sept 2013

ACADEMIC ACHIEVEMENTS

- **Research Fellow - Shyama Prasad Mukherjee (SPM) Fellowship** (Earth, Atmospheric, Ocean & Planetary Sciences) by Council of Scientific & Industrial Research (CSIR), India, 2007–2012 (<http://csirhrdg.nic.in/spm.htm>)
- Qualified **University Grants Commission (UGC) National Eligibility Test (NET) for Lectureship** in Environmental Sciences, 2008
- Qualified **CSIR-UGC NET & Junior Research Fellowship** (Earth, Atmospheric, Ocean & Planetary Sciences), Dec 2006

EDUCATION **PhD in Environmental Sciences, from School of Environmental Sciences, Jawaharlal Nehru University, India (2013)**

Thesis Title - Remote Sensing Approach to Study Morphotectonic Influences on Hydrogeoenvironment in the Vicinity of Faridabad Fault across River Yamuna Basin

The study intended to ascertain the influences of active faulting episodes (changing overall physical landscape) on the whole of hydrogeological environment in mining affected hard-rock terrain (located in vicinity of an active fault) by employing an integrated approach of hyperspectral remote sensing & GIS coupled with geomorphologic, geophysical investigations and geochemical / geological analyses.

MSc in Environmental Sciences, from School of Environmental Sciences, Jawaharlal Nehru University, India (2007)

CGPA = 8.25 out of 9.0

BSc (Gen) from University of Delhi, India (2005)

PUBLICATIONS

<http://scholar.google.co.in/citations?user=rF-7EFwAAAAJ>

• **Drainage network extraction and morphometric analysis in an Iranian basin using integrating factor analysis and geospatial techniques**

P. Sajadi, A. Singh, S. Mukherjee, Y.F. Sang, K. Chapi, M. Salari

Geocarto International (Taylor & Francis), Manuscript ID: TGEI-2019-0322

Submitted: 9 Aug 2019, Currently Under Revision

• **Multivariate statistical analysis of relationship between Tectonic Activity and Drainage Behavior in Qorveh-Dehgolan Basin Kurdistan, Iran**

P. Sajadi, A. Singh, S. Mukherjee, P. Luo, K. Chapi, M. Salari

Geocarto International (Taylor & Francis) Published online (10 Jun 2019)

DOI: [10.1080/10106049.2019.1611948](https://doi.org/10.1080/10106049.2019.1611948)

• **Influence of Structural Lineaments on Drainage Morphometry in Qorveh-Dehgolan Basin, Kurdistan, Iran**

P. Sajadi, A. Singh, S. Mukherjee, P. Luo, K. Chapi

Geocarto International (Taylor & Francis) Published online (25 Mar 2019)

DOI: [10.1080/10106049.2019.1573927](https://doi.org/10.1080/10106049.2019.1573927)

• **Hyperspectral remote sensing applied for hydrogeological mapping in a hard-rock terrain for water resource management**

A. Singh, S. Mukherjee

Proceedings of SPIE (Society of Photo-Optical Instrumentation Engineers),

ISSN: 0277-786X, 8181, 81810K (2011) DOI: [10.1117/12.897923](https://doi.org/10.1117/12.897923)

PUBLICATIONS

<http://scholar.google.co.in/citations?user=rF-7EFwAAAAJ>

- **Remote sensing approach to detection of initial stages of urban intrusion into natural land cover**
A. Singh, S. Mukherjee
Proc. 32nd Asian Conference on Remote Sensing (ACRS 2011)
ISBN 978-1-61839-497-2 Vol.2 pp. 1341
<http://toc.proceedings.com/14023webtoc.pdf>
- **Preliminary Results from Subsurface Hydrological Investigations of Dehgholan Plain, Kurdistan, Iran using Geophysical Techniques**
P. Sajadi, A. Singh, S. Mukherjee, K. Chapi
International SWAT Conference 2012, J4 (Environmental Applications), pp. 622-635
Proc - <http://swat.tamu.edu/media/69009/swat-proceedings-2012-india.pdf>
- **Quantitative modeling of groundwater in Satluj River basin of Rupnagar district of Punjab using remote sensing and geographic information system**
C.K. Singh, S. Shashtri, A. Singh, S. Mukherjee
Environmental Earth Science (Springer), 62(4), 871 - 881 (2011)
DOI: [10.1007/s12665-010-0574-7](https://doi.org/10.1007/s12665-010-0574-7)
- **Application of GWQI to assess effect of land use change on groundwater quality in Lower Shiwaliks of Punjab: remote sensing and GIS based approach**
C.K. Singh, S. Shashtri, S. Mukherjee, R. Kumari, R. Avatar, A. Singh, R.P. Singh
Water Resources Management (Springer), 25 (7), 1881 - 1898 (2011)
DOI: [10.1007/s11269-011-9779-0](https://doi.org/10.1007/s11269-011-9779-0)
- **Identification and Analysis of Groundwater Potential Zones in Ken-Betwa River Linking Area using Remote Sensing and GIS**
R. Avtar, C.K. Singh, S. Shashtri, A. Singh, S. Mukherjee
Geocarto International (Taylor & Francis), 25 (5), 379 - 396 (2010)
DOI: [10.1080/10106041003731318](https://doi.org/10.1080/10106041003731318)
- **Hydromorphogeological microzonation to infer groundwater potential and quality in National Capital Region**
S. Mukherjee, S. Shashtri, C.K. Singh, A. Singh
Bhu-Jal News [Quarterly journal of Central Ground Water Board (CGWB), Ministry of Water Resources, Government of India] ISSN: 0970-5775
24 (4), 93-107 (2009) <http://cgwb.gov.in/documents/Bhujal-News-24-4.pdf>

BOOK CHAPTERS

- **Analysis of Drainage Morphometry and Tectonic Activity in Dehgulan Basin Kurdistan, Iran, using Remote Sensing and GIS**
P. Sajadi, A. Singh, S. Mukherjee, H. Asthanaa, P. Luo, K. Chapi
Geospatial Applications for Natural Resources Management, Chapter 9
CRC Press, Taylor & Francis Group, pp 131-150 (2017) ISBN: 978-1-1386-2628-7
- **Groundwater Exploration: Geophysical Remote Sensing and GIS Techniques**
S. Shashtri, A. Singh, S. Mukherjee, S. Eslamian, C.K. Singh
Handbook of Engineering Hydrology, Vol. 1: Fundamentals and Applications
CRC Press, Taylor & Francis Group, pp 207-219 (2014) ISBN: 978-1-4665-5244-9
- **Hydrological Investigations of Dehgulan Plain, Kurdistan, Iran using Geophysical Techniques**
P. Sajadi, A. Singh, S. Mukherjee, K. Chapi
Environment and Biodiversity
Narendra Publishing House, Delhi, India, pp 21-34 (2014) ISBN: 978-93-82471-51-6

CONFERENCES / SEMINARS / WORKSHOPS

- Lecture in Pre-Congress Workshop of **International Congress on Urban Green Spaces 2012** - (Improved Understanding & Monitoring of Urban Green Spaces – Advanced Remote Sensing Paradigm)
- Oral Presentation in **COSPAR Scientific Assembly 2012** (Comprehensive Assessment of Coprates Chasma on Mars as a Target Site for Future Exploration Missions) In Abstracts, 39th COSPAR Scientific Assembly 2012 (CD) ISSN: 1815–2619
www.cospar-assembly.org/abstractcd/COSPAR-12/abstracts/B0.2-0015-12.pdf
- Poster Presentation in **32nd Asian Conference on Remote Sensing (ACRS) 2011**, October 2011, Taipei, Taiwan - (Remote sensing approach to detection of initial stages of urban intrusion into natural land cover)
- Oral Presentation in **SPIE Remote Sensing Conference 2011**, Prague, Czech Republic - (Hyperspectral Remote Sensing applied for Hydrogeological Mapping in a hard-rock terrain for Water Resource Management)
- **7th ISPRS WG VI/5 and Student Consortium Summer School, Taiwan** - Spatial Information Sciences for Environmental Monitoring
- **ACRS 2011 Pre-Conference Tutorials** at National Cheng Kung University, Taiwan – Airborne LiDAR and Mobile Mapping Technologies
- Participated in **National Workshop on Soft Computing Techniques in Hydrology and its Applications** by National Institute of Hydrology and Indian Association of Hydrologists during June 20-24, 2011 with emphasis on development of soft computing based hydrological models on MATLAB.

- Attended **11th Workshop on Exploration on Mars & Moon** and subsequently **Brainstorming Session on Mars Science and Exploration 2011** by PLANEX, Physical Research Laboratory (PRL), India.
- Poster Submission (Co-authored) in **Euro Conference 2009 - 8th Euro Conference of Rock Physics & Geomechanics**, Ascona, Switzerland (Rock Geophysics Infers Groundwater in Hard Rock Areas of India)
- Attended DST sponsored **Advanced Training Programme on Application of Geomatics in Urban Transportation Planning and Management** at Dept. of Civil Engineering, St. Peter's University, Chennai during 13 Oct – 1 Nov 2008
- Poster presentation in **National Symposium on Searching Missing Links of Conservation & Management for Sustainable Development of Environment 2007** - (Structuring a Decision Support System Based on GIS-integrated Modelling as a Tool for Effective Conservation Strategies and Developmental Planning)

ADDITIONAL EXPERIENCE

- Assisted Prof. S. Mukherjee, JNU in Asian Office of Aerospace Research & Development Unit (AOARD, NASA) sponsored project "Influence of Sun & other cosmic factors on environment of the space around Earth" for installation and operation of Cosmic Ray Detector in collaboration with Yerevan Physics Institute (Cosmic Ray Division), Armenia as a part of Space Environmental Viewing and Analysis Network (SEVAN).
- MSc dissertations co-supervised (Gautam Buddha University) in 2015 (Assessir soil attenuation potential in vicinity of Hindon River in a part of Ghaziabad district, Uttar Pradesh) & in 2016 (Changes in aerosol properties due to persistent crop-residue burning activities over Indo-Gangetic Basin)

COMPUTING / ANALYTICAL SKILLS

- Statistical data analysis and visualization using SPSS, R, Python, Matlab
- Life Cycle Assessment using OpenLCA
- Geological & hydrological modelling, analysis & visualization - Rockworks 17, ArcSWAT, QSWAT, MODFLOW, HEC-RAS, Phreeqc
- Proficiency in GIS (ArcGIS 10.4, QGIS v3, Global Mapper v17) and Satellite Image Processing & Analysis (ENVI, ERDAS Imagine, Geomatica, Google Earth Engine)

LAB ANALYTICAL SKILLS AND FIELD EXPERIENCE

- Experience of field geophysical surveys (resistivity & magnetic)
- Experience of field topographic & hydrological surveys in various terrain
- Analysis of rocks, soil/sediment & water samples using spectrophotometer, flame photometer, AAS, XRD, WDXRF, EDXRF, SEM-EDS, FTIR

ADDITIONAL AWARDS AND RECOGNITION

- Geological Society of America (GSA) International Section Travel Grant Award for Presentation at GSA Annual Meeting 2012, USA.
 - SPIE Travel Grant for Presentation in SPIE Remote Sensing 2011 in Prague, Czech Republic.
 - CSTPRS Support Award for Presentation in ACRS 2011, Taipei, Taiwan.
 - North Zone winner at Intel Science Talent Discovery Fair (ISTDF) and participation at National Level at ISTDF 2001 in Mumbai, India.
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MEMBERSHIP OF PROFESSIONAL BODIES

- American Geophysical Union (AGU) 2011 – 2016
 - Geological Society of America (GSA) 2012 – 2016
 - Committee on Space Research (COSPAR) Associate 2012 – 2017
 - Society of Photo-Optical Instrumentation Engineers (SPIE) 2011 – 2013
 - International Association of Hydrogeologists (IAH) 2011 – 2012
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REFERENCES

Prof. Saumitra Mukherjee (PhD Supervisor)

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New Delhi – 110067, INDIA

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NH-8, Bandarsindri, Kishangarh, District - Ajmer, Rajasthan – 305817, INDIA

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