CURRICULUM VITAE

1. Name: **DR ARUN KUMAR SARAF**
s/o Late Shri Hukum Chand Saraf

Designation: Professor (High Academic Grade)

Date of Birth: 08 October 1959

Place of Birth: Lalitpur (Uttar Pradesh)

Salary: Gross: Rs. 175801/- (Scale: HAG: Rs. 67000-79000/- + GP Rs.12000/-)

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2. Educational Qualifications:

Degree conferred (begin with Bachelor's degree):

Sl. No.	Degree	University	Year	Subjects	Division
1	B.Sc.	Saugar University, India (Dr. Harisingh Gour Vishwavidyalaya, Sagar)	1981	Geology, Geography, Chemistry & Hindi	First
2	M. Sc.	Roorkee University* (now IITR) India	1983	App. Geology	First
3	Ph.D.	Dundee University, **United Kingdom**	1989	**Remote Sensing**	Awarded

3. a) Details of professional training and research experience:

Duration	Institution	Designation	Nature of work done
1983-86	University of Roorkee (now IITR)	J.R.F. and S.R.F Fellowship	Sedimentology and Geomorphology on CSIR direct of Kosi River Alluvial Fan
1986-89	**Dundee University, United Kingdom**	**Research Fellow on "National Scholarship for Study Abroad"**	**Remote Sensing Applications in Geobotanical Exploration**
Feb. 19-23,1990	CSRE, IIT, Bombay	Trainee	Geographic Information Systems for Resources Data Handling, Analysis and Management
Feb.25-4thMarch, 1991	CED, University of Roorkee (now IITR)	Trainee	Artificial Intelligence

* University of Roorkee has been upgraded to Indian Institute of Technology, Roorkee on 21.09.2001.

1994-95	**Goddard Space Flight Centre, NASA, U.S.A.**	**Visiting Scientist (On Indo-US Fellowship)**	**Passive Microwave data for snow-depth estimation**
June 13th-July 3rd, 1997	CANMET, Canada and M&H, U.S.A.	UNDP-HHP Fellowship	Remote Sensing and GIS applications in Small Hydro Projects

b) Details of employment:

27.12.89-8.4.96	University of Roorkee (now IITR)	Lecturer	Taught (post graduate level) Subjects taught: GIS and Remote Sensing, Geohydrology
9.4.96-22.10.2003	University of Roorkee (now IITR)	Assistant Professor	Taught (post graduate level) Subjects taught: GIS and Remote Sensing, Geohydrology
23.10.2003-25.01.2006	IITR	Associate Professor	Taught (post graduate level) Subjects: Principles of GIS and Advances in GIS
26.01.2006- till date	IITR	Professor	Teaching (undergraduate & post graduate levels) Subjects: Principles of GIS and Advances in GIS

4. **Research specialization:** Geographic Information System (GIS), Remote Sensing, Digital Image Processing and Groundwater Hydrology

5. **Honours and Awards:**

a. INSA – Royal Society, U.K. Fellowship – 2002
b. INSA – Chinese Academy of Sciences Bilateral Fellowship - 2011
c. National Remote Sensing Award-2001
d. GIS Professional of the Year-2001
e. National Scholarship for Study Abroad 1986, Govt. of India
f. Indo-US S&T Fellowship, 1994-95
g. Khosla Research Award '96
h. Khosla Research Prize'96
i. Khosla Research Prize'97
j. Excellent Performance Recognition by IITR for the years 2001-02
k. Excellent Performance Recognition by IITR for the years 2002-03
l. Excellent Performance Recognition by IITR for the years 2003-04
m. Excellent Performance Recognition by IITR for the years 2004-05
n. Best Paper Award in Map Asia 2004 (Beijing, China)
o. **Nominated as Scientific Board Member of the International Geoscience Programme (IGCP) Scientific Board of UNESCO and IUGS**
p. **INSA – Academy of Sciences, Iran Bilateral Fellowship - 2016**

6. **Development of Labs/facilities:**

(a) Geographic Information Systems Lab
(b) Digital Image Processing Lab
(c) **NOAA-HRPT-FY-CHRPT-MVISR Satellite Earth Station**
(d) **Terra/Aqua-MODIS Satellite Earth Station** (project has been cleared by the PAMC, DST/MoES)

7. **Extensive experience with DIP & GIS software:**

a. Arc GIS 10
b. Arc/View 3.2, Spatial Analyst 2.0, Image Analyst 1.0, Network Analyst 1.0 & 3D Analyst 1.0

c. ERDAS 10

8. Development of courses:

(a) Geographic Information Systems (GIS)
(b) Digital Image Processing
(c) Groundwater Hydrology
(d) Advance Remote Sensing
(e) Advance GIS

9. Membership in scientific and professional societies:

(a) Indian Society of Remote Sensing (ISRS)
(b) Indian Society of Geomatics (ISG)
(c) International Association of Hydrological Sciences (IAHS)
(d) Indian Society of Earthquake Engineering (ISET)
(e) Indian Association of Soil and Water Conservationists (IASWC)
(f) Indian Society for Rock Mechanics & Tunnelling Technology (ISRMTT)

10. Administrative Experience:

Member in National and IITR Committees:

a. **Member, PAC-Seismicity, MoES New Delhi** (since 2007)
b. **Member, PAC-International Programme on Environment, Earth and Atmospheric Sciences, DST, New Delhi (**since 2010)
c. **Member**, Expert Panel of Indian National Committee on Ground Water (INCGW) (since 2009)
d. **Member, PAMC - Seismicity Programme, DST, New Delhi** (2002-2007)
e. **Member, PDA, CAIR (DRDO), Bangalore**
f. Member, Board of Courses and Studies, ISMU, Dhanbad (2005-2007)
g. Member, Executive Council of IGS (2008-2011)
h. Member, IITR-Office Automation Committee (since 2004)
i. **Coordinator** , IITR Hospital Computerization Committee (since 2006)
j. **Convener**, Institute Lecture Series (since 2006)
k. Member, IITR ISC Advisory Committee (since 2008)
l. Member, IITR Information Superhighway Centre Purchase Committee (since 2007)
m. Member, IITR Software Purchase Committee (since 2002)
n. Member, Board for Sponsored Research & Industrial Consultancy, IITR (2001-03, 2009-onward for two years)
o. **Chairman**, Department's Finance and Purchase Committee (2007-2009)
p. **Chairman,** Department Research Committee (2010-2012)
q. Member, Executive Council of Indian Society of Geomatics (2008-2011)
r. Member, Expert Panel of Indian National Committee on Ground Water (INCGW) (2009-till date)
s. Geoscience Advisory Council (GAC) of Ministry of Mines (GoI) (2011-2015)
t. Expert of Governing Body of Jharkhand Space Applications Center (2013-2016)
u. Expert Member of UGC Review Committee of Geology Department, Patna University (2011-14)
v. Expert Member of UGC Review Committee of Geology Department, Lucknow University (2014-18)
w. Head, Department of Earth Sciences, IIT Roorkee (1 Jan. 2012- 31 Jan. 2015)
x. Member, Advisory Committee of Institute Computer Center, IITR (2014-2016)
y. Member, Library Advisory Committee, IITR (2015-till date)

11. **Editor:** International Journal of Remote Sensing (2003 – 2007)
Associate Editor: International Journal of Remote Sensing (2008 – till date)

12. **Member of Editorial Board:**

(a) International Journal of Geoinformatics (2003-2010)
(b) Journal of the Indian Society of Remote Sensing (2002-2007)
(c) Hydrology Journal (since 2000)
(d) International Geoinformatics Research and Development Journal (since 2010)
(e) Journal of Remote Sensing & GIS (since 2011)
(f) International Journal of Environmental Health Science – Pollution Control (IJEHS) (since 2011)

13. **Chaired / Co-chaired a session in Conferences / Seminars:**

a. A session on Natural Resources and Environment in GIS-2004: Third International Conference, organised by Bahrain Society of Engineers at Bahrain (Kingdom of Bahrain) between 27-29 Sept. 2004.

b. A session on Vendors Commercial in GIS-2004: Third International Conference, organised by Bahrain Society of Engineers at Bahrain (Kingdom of Bahrain) between 27-29 Sept. 2004.

c. Member of Panel Discussion in GIS-2004: Third International Conference, organised by Bahrain Society of Engineers at Bahrain (Kingdom of Bahrain) between 27-29 Sept. 2004

d. A session on Earth Sciences in Map India-2001 (4^{th} Annual International Conference on GIS, GPS and Remote Sensing, 7-9 February, 2001, New Delhi).

e. A session on Environmental Planning in Map India-2002 (5^{th} Annual International Conference on GIS, GPS and Remote Sensing, 6-8 February, 2002, New Delhi).

f. A session on GIS-Remote Sensing based Seismic Hazard Studies (Symposium on Seismic Hazard Analysis and Microzonation, to be held between September 23-24, 2005 at Department of Earthquake Engineering, Indian Institute of Technology Roorkee, Roorkee).

g. A session on Watershed Management & Irrigation Water Management (International Symposium on Recent Advances in Water Resources Development and Management (RAWRDM-2005), November 23-25, 2005 held at WRDM, IIT Roorkee).

h. A session on Earthquake and Precursory studies (Workshop on "Himalayan Earthquakes: a Fresh Appraisal (HIMEQ-2006) held between 7-8 Oct. 2006 at Wadia Institute of Himalayan Geology).

i. A session on Brain Storm Track – Panel Discussions (International Workshop & Conference on "Geoinformation Technology for NDM & Rehabilitation" held between 8-9 May 2006 at Esfahan, Iran.

j. A session on Earthquake Prediction (5^{th} International Conference on Seismology and Earthquake Engineering (SEE5)) held between 13-16 May 2007 at Tehran, Iran.

k. A session on Earthquakes and Landslides (2nd International Conference on Geoinformation Technology for Natural Disaster Management and Rehabilitation (GiT4NDM&R) held in Bangkok during 30-31 January 2009 at Asian Institute of Technology, Bangkok, Thailand.

l. Winter fog over the Indo-Gangetic Plains: Mapping and Modelling using Remote Sensing and GIS" in the ICOACCE-10 on 12th February 2010 (jointly organized by the Techbuddy Consulting & GITS, Udaipur.

m. Remote Sensing Observations of Earthquake Thermal Precursors" in the National Seminar on Geoscience for Society and Environment on 20th February 2010 organized by the Department of Geology, Utkal University, Bhubaneswar.

n. Distinguish Guest in the National Seminar on "Management of groundwater resources in India with special reference to Bihar" and deliver an invited talk entitled "Remote Sensing and GIS Technologies in Groundwater Recharge Studies" between 18-19th March 2013.

o. National Conference on 'Revisiting Development Paradigms for Uttarakhand', organised by Department of HSS, IIT Roorkee between 15-16th Feb. 2014.

p. International Symposium on Geoinformatics (IGS-2014) (chaired session on "Geoinformatics in Environment"), organized by University Putra Malaysia, Kuala Lumpur, Malaysia between 14-15th Oct. 2014.

q. National Seminar on Geo-Environmental Hazards and Neo-Tectonic Activities in Himalaya organized by Department of Geology, HNB Garhwal University Campus, Badshahi Thaul, Tehri Garhwal between 28-30th Oct. 2014.

r. Integrated Water Resource Management session chaired in the International Conference on Water, Environment, Energy and Society (ICWEES – 2016), held between March 15 – 18, 2016 at AISECT University, Bhopal.

14. <u>Coordinated Training / Workshop / Seminars</u>

a. Low Flow Estimation Training cum Workshop between 9-13 October 2001 at AHEC with CEH, U.K. (sponsored by DFID, U.K.)

b. National Conference on "Earth Sciences in India: Challenges and Emerging Trends" Convener, between 7-9 Nov. 2013 at Department of Earth Sciences, IIT Roorkee.

c. Q.I.P. Sponsored One Day Workshop entitled "Geoinformatics in Earthquake Studies"QIP Centre, IIT Roorkee 19-20th February 2016

d. Short-Term Training Course on GIS Concept and Applications CED, IIT Roorkee 22-26th June, 2015

15. <u>Visits abroad:</u>

a. United Kingdom, 1986-1989, 1993, 2002
b. France, 1988
c. GSFC-NASA, United States, 1994, 1997
d. Nepal, 1995, 1999
e. Canada, 1997
f. China, 2004, 2011
g. Bahrain, 2004
h. UAE, 2004, Dec. 2015
i. Iran, 2007, 2011
j. Thailand, 2009
k. Japan, 2009
l. Russia, 2010

m. Bhutan, 2011
n. Malaysia, March 2012, Sept. 2012, Oct. 2014

List of publications in National and International Journals

1. **Saraf, A. K.**, A. P. Cracknell and J. McManus, (1989), Geobotanical applications of Airborne Thematic Mapper data in Sutherland, N-W Scotland, International Journal of Remote Sensing, Vol. 10, No. 3, 1989, pp. 545-555.

2. **Saraf, A. K.** and A. P. Cracknell, (1989), Linear discriminant and profile analysis: An aid in remote sensing for geobotanical investigation, International Journal of Remote Sensing, Vol. 10, No. 11, pp. 1735-1748.

3. **Saraf, A. K.** and S. K. Jain, (1993), Characteristics and fundamental properties of geographic data, GIS Today, July 1993, pp. 23-25.
4. Jain, S. K. and **A. K. Saraf** (1995), Storage and retrieval of spatial data in GIS, GIS Today, Vol.4, 1995, pp. 3-6.

5. R. P. Gupta, **A. K. Saraf**, P. Saxena and R. Chander (1994), IRS Detection of surface effects of the Uttarkashi earthquake of 20 October 1991, Himalaya, International Journal of Remote Sensing, Vol. 15, No.11, pp. 2153-2156.

6. Prakash, A., **A. K. Saraf**, R. P. Gupta, D. Dutta and R. M. Sundaram, (1994), Surface thermal anomalies associated with underground fires in Jharia coal mines, India, International Journal of Remote Sensing, Vol. 16, No. 12, pp. 2105-2109.

7. **Saraf, A. K.**, R. P. Gupta, S. K. Sengupta and A. Prakash, (1995), Landsat TM data for estimating ground temperature and depth of subsurface coal-fire in Jharia Coalfield, India, International Journal of Remote Sensing, Vol. 16, No.12, pp. 2111-2124.

8. Gupta, R. P., R. Chander, A. K. Tewari and **A. K. Saraf**, (1995), Remote sensing delineation of zones susceptible to seismically induced liquefaction in the Ganga plains, Journal of Geological Society of India, Vol. 46, July 1995, pp. 75-82.

9. Das, J. D., **A. K. Saraf** and A. K. Jain, (1995), Fault Tectonics of Shillong Plateau and adjoining regions, Northeast India using remote sensing data, International Journal of Remote Sensing, Vol. 16, No. 9, pp. 1633-1646.

10. Prakash, A., R. G. S. Sastry, R. P. Gupta and **A. K. Saraf**, (1995), Estimating the depth of buried hot features from thermal IR remote sensing data : a conceptual approach, International Journal of Remote Sensing, Vol.16, No.13, pp. 2503-2510.

11. Prakash, A., **A. K. Saraf**, R. P. Gupta, M. Dutta and R. M. Sundaram, (1995), Surface thermal anomalies associated with underground fires in Jharia coal mines, India, International Journal of Remote Sensing, 1995, Vol. 16, No. 12, pp.2105-2109.

12. Das, J. D., **A. K. Saraf** and A. K. Jain, (1996), A Satellite picture reveals seismically potential tectonic structures in North-east India, International Journal of Remote Sensing, Vol.17, No.8, pp.1433-1437.

13. **Saraf, A. K.**, J. Das, B. Agarwal and R. M. Sundaram, (1996), False topography perception phenomena and its correction, International Journal of Remote Sensing, Vol.17, No.18, pp.3725-3733.

14. **Saraf, A. K.**, B. Agarwal, V. N. Singh, R. M. Sundaram and R. P. Gupta, (1996), GIS predicted isoseismal map of Garhwal Himalayas, India, ITC Journal, 96-3/4, pp.272-277.

15. **Saraf, A. K.** and Arun Kumar (1997), GIS in small hydro planning and resource management, GIS@Development, Sept.-Oct., 1997, pp.30-37.

16. **Saraf, A. K.** and J. D. Das, (1997), Neogene deformation of Siwaliks affected by the Delhi-Hardwar ridge as seen in satellite data, India, Current Science, Vol.73, No.10, 25 November 1997, pp.877-880.

17. **Saraf, A. K.**, (1997), Near real time earthquake information on Internet and applications of Geographic Information System, Newsletter of the Indian Society of Geomatics, Vol.3, No.2, pp.13-14.

18. Prakash, A., R. P. Gupta, **A. K. Saraf**, (1997), A Landsat TM based comparative study of surface and subsurface fires in the Jharia coalfield, India, International Journal of Remote Sensing, 1997, Vol. 18, No.11, pp.2463-2469.

19. **Saraf, A. K.**, (1998), Jabalpur earthquake of 22nd May, 1997: Assessing the causes and damages using remote sensing and GIS techniques, (1998), GIS @ Development, January - February, 1998, pp.24-28.

20. R. P. Gupta, **A. K. Saraf** and R. Chander, (1998), Discrimination of areas susceptible to earthquake-induced liquefaction from Landsat data, International Journal of Remote Sensing, 1998, Vol.19, No.4, pp.569-572.

21. **Saraf, A. K.** and P. R. Choudhury, (1998), Integrated Remote Sensing and GIS for Groundwater Exploration and Identification of Artificial Recharge Sites, International Journal of Remote Sensing, Vol. 19, No. 10, pp.1825-1841.

22. **Saraf, A. K.**, (1998), IRS-LISS-II improves geological mapping in the Himalayas, International Journal of Remote Sensing, Vol. 19, No.12, pp. 2239-2243.

23. **Saraf, A. K.**, J. L. Foster and P. Singh and Soukhin Tarafdar, (1999), Passive microwave data for snow-depth and snow-extent estimations in the Himalayan Mountains, International Journal of Remote Sensing, Vol. 20, No.1, pp.83-95.

24. **Saraf, A. K.**, (1999), IRS-1C-LISS-III and PAN data fusion: An approach to improve remote sensing based mapping techniques, International Journal of Remote Sensing, Vol.20, No.10, pp.1929-1934.

25. Sarkar, I. and **A. K. Saraf**, (1999), A study of the Chamoli earthquake-induced damage using ground and satellite data, Current Science, 78, pp.91-97.

26. **Saraf, A. K.**, (2000), IRS-1C-PAN Depicts Chamoli earthquake induced landslides in Garhwal Himalayas, India, International Journal of Remote Sensing, Vol.21, No.12, pp. 2345-2352.

27. **Saraf, A. K.**, V. C. Goyal, A. S. Negi, B. Roy and P. R. Choudhary, (2000), Remote sensing and GIS techniques for study of springs in a watershed in Garhwal Himalayas (India), International Journal of Remote Sensing, Vol.21, No.12, pp.2353-2361.

28. **Saraf, A. K.**, P. Kumar and R. Kumar, (2000), RGB-CMYK-HLS pseudo colour transformation technique for enhancement of geological structures, International Journal of Remote Sensing, Vol.21, No. 15, pp.2769-2776.

29. **Saraf, A. K.,** P. R. Choudhury, B. Sarma and P. Ghosh, (2001), Impacts of reservoirs on groundwater and vegetation: A study based on remote sensing and GIS techniques, International Journal of Remote Sensing, Vol.22, No. 13, pp.2439-2448.

30. **Saraf, A. K.**, P. Mishra, S. Mitra, B. Sarma and D. K. Mukhopadhyay, (2002), Remote sensing and GIS technologies for improvements in geological structures interpretation and mapping, International Journal of Remote Sensing, Vol. 23, No.13, pp.2527-2536.

31. **Saraf, A. K.** and I. Sarkar (2002). Seismotectonic and Environmental Aspects of the Chamoli Earthquake using Ground and Satellite data, Himalayan Geology, Vol. 23 (1&2), 2002, pp.77-86.

32. **Saraf, A. K.**, A. Sinvhal, H. Sinvhal, P. Ghosh and B. Sarma, (2002), Satellite data reveals 26th January 2001 Kutch earthquake induced ground changes and appearance of water bodies, International Journal of Remote Sensing, Vol. 23, No. 9, 2002, pp. 1749-1756.

33. Rees, H.G., A.M. Croker, M. K. Singhal, **A. K. Saraf**, A. Kumar, M.D. Zaidman and A. Gustard, (2002), Flow regime estimation for small-scale hydropower development in Himachal Pradesh, Journal of Applied Hydrology, Vol.XV, No. 2&3, pp.77-90.

34. **Saraf, A. K.,** A. S. Roy, B. Sarma, P. Ghosh, (2002), Development of An Integrated Remote Sensing and GIS Technique to Assess the Impact of Reservoirs on Groundwater in Hard Rock Terrain, Asian Journal of Geoinformatics, Vol. 3, No. 2, pp.25-33.

35. Choudhary, P. R. and **A. K. Saraf**, (2002), Artificial recharge site selection using GIS and remote sensing, Geo Spatial Today, Oct. 2002, pp. 71-80.

36. **Saraf, A. K.**, (2003), Development of a pseudo colour transformation technique using satellite image and survey map for change detection, International Journal of Remote Sensing, Vol. 24, No. 6, pp.1183-1187.

37. Jain, S. K., P. Singh, **A. K. Saraf** and S. M. Seth, (2003), Estimation of sediment yield for a rain, snow and glacier fed river in the western Himalayan region, Water Resources Management, Vol. 17, No. 5, pp. 377-393.

38. **Saraf. A. K.**, B. Sarma and Chandramani, (2003), Spatial Statistical Technique in relating earthquake epicentres with structural features, GIS @ Development, June 2002, pp. 23-27.

39. **Saraf, A. K.** and S. Choudhury, (2003), Earthquakes and thermal anomalies, Geospatial Today, Vol. 2, No. 2, pp. 18-20.

40. Sinvhal, A., P. R. Bose, V. Prakash, A. Bose, **A. K. Saraf** and H. Sinvhal, (2003), Isoseismals for the Kutch earthquake of 26th January 2001, Journal of Earth System Science, 112, No. 3, pp. 375-383.

41. **Saraf, A. K.**, P. R. Choudhury, B. Roy, B. Sarma, Vijay S. and S. Choudhury (2004), GIS based surface hydrologic modelling in identification of groundwater recharge zones, International Journal of Remote Sensing, Vol. 25, No. 24, pp. 5759-5770.

42. **Saraf, A. K.** (2005), GIS Education in India: Important issues and Challenges**,** GIS Development, Vol. 9, No. 1, pp. 30-31.

43. **Saraf, A. K.** and S. Choudhury, (2005), NOAA-AVHRR detects thermal anomaly associated with 26 January, 2001 Bhuj Earthquake, Gujarat, India, International Journal of Remote Sensing, Vol. 26, No. 6, pp. 1065–1073.

44. **Saraf, A. K.,** P. Ghosh, B. Sarma and S. Choudhury, (2005), Development of a new image correction technique to remove false topographic perception phenomena, International Journal of Remote Sensing, Vol. 26, No. 8, 20 April 2005, 1523–1529.

45. **Saraf, A. K.** and Swapnamita Choudhury (2005), Thermal Remote Sensing Technique in the study of Pre-Earthquake Thermal Anomalies, The Journal of Indian Geophysical Union, Vol. 9, No. 3, pp. 197-207.

46. **Saraf, A. K.** and S. Choudhury, (2005), Satellite detects surface thermal anomalies associated with the Algerian earthquakes of May 2003, International Journal of Remote Sensing, Vol. 26, No. 13, 10 July 2005, pp. 2705-2713.

47. **Saraf, A. K.** and S. Choudhury, (2006), NOAA-HRPT and FY-CHRPT Satellite Earth Station at IITR, GIS Development, Vol. 9, No. 12, pp. 44-46.

48. **Saraf, A. K**., B. P. Mishra, S. Choudhury and P. Ghosh, (2005), DEM generation from NOAA-AVHRR nighttime data and its comparison with USGS-DEM, International Journal of Remote Sensing, Vol.26, No. 18, pp. 3879-3887.

49. **Saraf, A. K.**, S. Choudhury and S. Dasgupta, (2006), Satellite observations of the great mega thrust Sumatra earthquake activities, *International Journal of Geoinformatics*, Vol. 1, No. 4, pp. 67-74.

50. **Saraf, A. K.** and S. Choudhury (2006), Himalayas - the Abode of Snow: As Seen from Satellites, *International Journal of Remote Sensing*, Vol. 27, No. 9, pp. 1739–1740.

51. Choudhury, S., S. Dasgupta, **A. K. Saraf** and S. Panda (2006), Remote Sensing Observations of Pre-Earthquake Thermal Anomalies in Iran, *International Journal of Remote Sensing*, Vol. 27, No. 18-20, pp. 4381-4396.

52. S. Choudhury, **A. K. Saraf** and S. K. Panda (2006), SSM/I Applications in Studies of Thermal Anomalies associated with Earthquakes, *International Journal of Geoinformatics*, Vol. 2, No.3, pp. 9-16.

53. Jain, S. K., A. Goswami and **A. K. Saraf** (2006), Flood inundation mapping using NOAA AVHRR data, Water Resources Management, Vol. 20, Number 6 / December, 2006, pp. 949-959, DOI 10.1007/s11269-006-9016-4.

54. **Saraf, A. K.**, S. T. Sinha, P. Ghosh and S. Choudhury, (2007), A new technique to remove false topographic perception phenomenon and its impacts in image interpretation, International Journal of Remote Sensing, Vol. 28, No. 5, pp. 811 - 821.

55. Das, J. D., **A. K. Saraf** and S. Panda, (2007), Satellite data in rapid analysis of Kashmir earthquake (October 2005) triggered landslide pattern and river water turbidity in and around epicentral region, International Journal of Remote Sensing, Vol. 28, No. 8, pp. 1835-1842.

56. Choudhury, S. H. Rajpal and **A. K. Saraf** (2007), Mapping and forecasting of North Indian winter fog: an application of spatial technologies, International Journal of Remote Sensing, Vol. 28, No. 16, pp. 3649-3663.

57. Panda, S. K., S. Choudhury, **A. K. Saraf** and J. D. Das, (2007), MODIS land surface temperature data detects thermal anomaly preceding 08 October 2005 Kashmir earthquake, *International Journal of Remote Sensing*, Vol. 28, No. 20, pp. 4587-4596.

58. Das, J. D., T. Dutta and **A. K. Saraf**, (2007), Remote sensing and GIS application in change detection of the Barak river channel, N.E. India. Journal Indian Society of Remote Sensing, Vol. 35, No. 4, pp. 309-320.

59. **Saraf, A. K.**, S. Choudhury, S, K. Panda, S. Dasgupta and V. Rawat, (2007), Does a major earthquake precede a thermal anomaly? International Journal of Geoinformatics, Vol. 3, No.3, pp. 1-8.

60. Das, J. and **A. K. Saraf** (2007), Remote Sensing in mapping of Brahmaputra/Jamuna River channel pattern and its relation to various landforms and tectonic environment, International Journal of Remote Sensing, Volume 28, No.16, pp. 3619 - 3631.

61. Jasrotia, A. S., R. Kumar; **A. K. Saraf**, (2007), Delineation of groundwater recharge sites using integrated remote sensing and GIS in Jammu district, India, International Journal of Remote Sensing, Vol. 28, No. 22, pp. 5019 – 5036.

62. Jain, S. K., A. Goswami and **A. K. Saraf** (2008), Determination of Land Surface Temperature and its Lapse Rate in Satluj Basin using NOAA Data, International Journal of Remote Sensing, Vol. 29, No.11-12, pp. 3091-3103.

63. **Saraf, A. K.**, V. Rawat, P. Banerjee, S. Choudhury, S. K. Panda, S. Dasgupta and J.D. Das (2008), Satellite detection of earthquake thermal precursors in Iran, Natural Hazards, Vol. 47, No. 119-135 (Also available online at http://www.springerlink.com/content/683702x74kq785m8/fulltext.pdf, DOI: 10.1007/s11069-007-9201-7.

64. Jain, S. K., A. Goswami, **A. K. Saraf**, (2008), Accuracy Assessment of MODIS, NOAA and IRS Data in Snow Cover Mapping under Himalayan Condition, International Journal of Remote Sensing, Vol. 29, Nos. 19-20, pp. 5863-5878.

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60. **Saraf, A. K.** Swapnamita Choudhury, Santosh Panda and Sudipta Dasgupta, (2006), Satellites Detect Pre-Earthquake Transient Thermal Anomalies, Proceedings of 13th Symposium on Earthquake Engineering (13 SEE-06), held between 19-21 December 2006 at Department of Earthquake Engineering, Indian Institute of Technology Roorkee, Roorkee, Vol. I, pp. 65-74.

61. Das, J.D., **A. K. Saraf** and S. Panda, Kashmir Earthquake of 2005 generated Landslides and Water Turbidity as detected by Satellite Data and the Tectonic setup, Proceedings of 13th Symposium on Earthquake Engineering (13 SEE-06), held between 19-21 December 2006 at Department of Earthquake Engineering, Indian Institute of Technology Roorkee, Roorkee, Vol.I, pp. 335-341.

62. Das, J.D., S. Choudhury, **A. K. Saraf** and S. Panda, Earthquake Hazard Perception in Seismically Active Northeastern Part of India being Affected by the Analogous Sumatran Tectonic Setting, Proceedings of 13th Symposium on Earthquake Engineering (13 SEE-06), held between 19-21 December 2006 at Department of Earthquake Engineering, Indian Institute of Technology Roorkee, Roorkee, Vol. I, pp. 98-106.

63. **Saraf, A. K.** Swapnamita Choudhury, Santosh Panda and Sudipta Dasgupta, (2007), Remote Sensing Observations of Pre-earthquake Thermal Anomalies in Iran, Proceedings of 5th Conference on Seismology and Earthquake Engineering (SEE 5) held between 14-16 May 2007 at International Institute of Earthquake Engineering and Seismology, Tehran, Iran, full paper in CD.

64. **Saraf, A. K.** Swapnamita Choudhury, Santosh Panda and Sudipta Dasgupta, (2007), Does a major earthquake precede a thermal anomaly? Proceedings 1st International Workshop & Conference of Geoinformation Technology for Natural Disaster Management and Rehabilitation, held between 8-9 May 2007 at Esfahan, Iran, organized by Asian Institute of Technology, Bangkok & Association of Geoinformation Technology, Bangkok, pp. 9.

65. **Saraf, A. K.** (2007), Detection of earthquake thermal precursor by remote sensing technique, National Workshop on Earthquake Precursors, held between 28-29th June 2007 at Ministry of Earth Sciences, organised by Ministry of Earth Sciences, New Delhi.

66. **Saraf, A. K.**, S. Choudhury, V. Rawat, P. Banerjee, S. Dasgupta and J.D. Das, (2008), Detecting Earthquake Precursor: A Thermal Remote Sensing Approach, Map India-2008, held between 6-8 Feb. 2008, organised by GIS Development, NOIDA, India.

67. **Saraf, A. K.**, J. Das and V. Rawat, (2009), Can satellite detect early signatures of earthquake-induced landslides of Himalayas?, Proceedings of 2nd International Conference on Geoinformation Technology for Natural Disaster Management and Rehabilitation, held between 30-31 January 2009 at, AIT, Bangkok, Thailand, p. 256.

68. **Saraf, A. K.**,V. Rawat, S. Choudhury and J. Das, (2009), Earthquake thermal precursors: Their detection and analysis, Proceedings of 2nd International Conference on Geoinformation Technology for Natural Disaster Management and Rehabilitation, held between 30-31 January 2009 at, AIT, Bangkok, Thailand, p. 256.

69. **Saraf, A. K.,** V. Rawat, S. Choudhury, P. Banerjee, S. Dasgupta, and J.D. Das (2009), Remote Sensing Observations of Earthquake Thermal Precursors of India and Iran, Proceedings of 1st International Workshop on Validation of Earthquake precursors by Satellite and Terrestrial Observations (VESTO), Chiba University, Chiba, Japan, March 26-28, 2009, p.17.

70. **Saraf, A. K.**, Vineeta Rawat and J.D. Das and Kanika Sharma (2010), Remote Sensing Observations of Earthquake Thermal Precursors Proceedings of National Seminar on Geoscience for Society and Environment, Department of Geology, Utkal University, Bhubaneshwar, 22nd February 2010, p. 5.

71. **Saraf, A. K.**, J. D. Das, Ankita Biswas, Vineeta Rawat, Kanika Sharma & Yazdana Suzat (2011), SAR Interferometry detects post-seismic ground deformations related with 2001 Bhuj Earthquake, Proceedings of 1st International Symposium on the 2001 Bhuj Earthquake and Advances in Earthquake Science – 2011, organized by Institute of Seismological Research, Gandhinagar, January 22-24, 2011, pp91-92.

72. **Saraf, A. K.**, Advances in Remote Sensing and GIS Technologies in Earthquake Studies. Proceeding of 5th SASTech-2011, organized by Khavaran Higher Education Institute, Mashhad, Iran, May 12-17, 2011 (in CD).

73. **Saraf, A. K.,** J.D. Das, Vineeta Rawat and Kanika Sharma (2011), Satellite Remote Sensing in Earthquake Thermal Precursors studies, Proceedings of EDPD 2011 Conference, Kanyakumari, India, Sept. 21-25, 2011 (in CD).

74. **Saraf, A. K.,** Bhavya Maheshwari, Josodhir Das, K. K. Saifuddin, Variation in Rainfall Precipitation over India: GIS Aided Spatial and Temporal Analysis, Proceeding of 6th SASTech-2011, organized by Khavaran Higher Education Institute, Kuala Lumpur, Malaysia, March 25-26, 2012 (in CD).

75. **Saraf, A. K.**, (2012), Does a major earthquake precede a thermal anomaly? Proceedings of 11th International Symposium on Geoinformation (ISG-2012) held in Kuala Lumpur, Malaysia during 25-26th Sept. 2012, pp. 24.

76. **Saraf, A. K.** (2014), Winter Fog in North India: Menace or Natural Disaster? Proceedings of 13th International Symposium on Geoinformation (ISG-2014) held in Kuala Lumpur, Malaysia during -14-15th Oct. 2014, (in CD).

77. **Saraf, A. K.** and Josodhir Das, (2014), Satellite based detection of early occuring and co-sesmic landslides, Proceedings of National Seminar on Geo-Environmental Hazards and Neo-Tectonic Activities in Himalaya held in Department of Geology, HNB Garhwal University Campus, Badshahi Thaul, Tehri Garhwal between 28-30th Oct. 2014.

78. **Saraf, A. K.,** Suman Baral, Josodhir Das, Eirin Kar, Gaurav Singh and Susanta Borgohain, (2015), Nepal Earthquake of 25th April 2015: Remote Sensing in detection of pre-earthquake anomalous thermal line and co-seismic ground deformations, Proceedings of the 5th International Conference on Earth Observation for Global Changes and the 7th Geo-information Technologies for Natural Disaster Management held in Al Ain, UAE during 08-10th Dec. 2015 (in CD).

79. **Saraf, A. K.**, Srishti Dixit, Susanta Borgohain, Suman Sourav Baral, Josodhir Das and Gaurav Singh, (2016), Geo-Informatics in identification of potential groundwater recharge sites in Bundelkhand Craton, International Conference on Water, Environment, Energy and Society (ICWEES – 2016), held between March 15 – 18, 2016 at AISECT University, Bhopal.

80. Borgohain, S., Das, J., **Saraf, A. K.**, Singh, G., Baral, S. S. and Sharma, K., (2016), Flood Hazard Assessment of the Jiadhal Fan, Assam, India, Proceedings of International Conference on Climate Change Mitigation and Technologies for Adaptation (IC3MTA-2016), held between 20-21st June, 2016, at Synod College, Shillong, Meghalaya, pp.23-26.

81. Gaurav Singh,Ajanta Goswami, Josodhir Das, **A. K. Saraf**, Susanta Borgohain, (2016), Understanding the impact of regional climate condition and local features on Glacial behavior around Satopanth and Bhagirath Glacier in Alaknanda valley, Uttarakhand, India, Proceedings of International Conference on Climate Change Mitigation and Technologies for Adaptation (IC3MTA-2016), held between 20-21st June, 2016, at Synod College, Shillong, Meghalaya, pp.53-58.

PUBLICATIONS ON INTERNET

1. **Saraf, A. K.,** (1999), Vector Conversions Extension for Arc View 3.x, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=-439343986.

2. **Saraf, A. K.,** and Vijay S., (1999), Graphics Conversions Extension for Arc View 3.x, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=-1894324292.

3. **Saraf, A. K.,** (1999), Link to Word Perfect for Windows Script in Avenue for Arc View 3.x, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=609465638

4. **Saraf, A. K.,** (1999), Link to Internet Explorer Extension in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=941684366

5. **Saraf, A. K.,** (1999), Link to Netscape Communicator in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=775501676

6. **Saraf, A. K.,** (1999), Themes Intersections to Points (TIPs) in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=-245539193

7. **Saraf, A. K.,** (1999), Grid Analyst Extension in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=944902604

8. **Saraf, A. K.,** (2000), Nearest Neighbour Analyst Extension in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=949482021

9. **Saraf, A. K.,** (2000), Rename Table Field in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=950759006

10. **Saraf, A. K.,** (2000), Theme Tools Extension in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=952917437

11. **Saraf, A. K.,** (2000), Change Polygon Outline Pattern Extension in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/scripts.cfm?CFGRIDKEY=0A485DB6-2CF-11D4-942E005

12. **Saraf, A. K.,** P. Kundu, B. Sarma, (2001), Integrated remote sensing and GIS in groundwater recharge investigation and selection of artificial recharge sites in a hard rock terrain, http://www01.giscafe.com/technical_papers/Papers/paper031/Sarafpaper.pdf

13. **Saraf, A. K.,** (2001), Lineament / Drainage / Roads Density Analyst Extension in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/details.cfm?CFGRIDKEY=EFBFDDFC-2196-11D5-

14. **Saraf, A. K.,** (2001), Coordinates Tool Box Extension in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/details.cfm?CFGRIDKEY=D65BA982-2F9D-

15. **Saraf, A. K.,** (2001), Automatic Affine Transformation Extension in Avenue for Arc View 3.1, http://gis.esri.com/arcscripts/details.cfm?CFGRIDKEY=4284C0B0-4577-11D5-

16. **Saraf, A. K.**, (2001), Indian Institute of Technology, Roorkee Campus Map at http://www.iitr.ernet.in/about/map/index.htm

17. **Saraf A. K.**, B Sarma and Chandramani (2002), Spatial Statistical Technique in relating earthquake epicentres with structural features, http://www.gisdevelopment.net/application/natural_hazards/earthquakes/nheq0010.htm

18. Choudhary, P. R. and **A. K. Saraf, (2002),** Artifical recharge site selection using GIS and remote sensing, http://www.geospatialtoday.com/articles/article_80.asp

Participated in the educational / documentary films:

Sl. No.	Title of the film	Year	Coordinator
1.	Optical properties of minerals in reflected light Part I (in Hindi)	1996	Dr. M. S. Pandian (now at Uni. of Podicherry)
2.	Optical properties of minerals in reflected light Part II (in Hindi)	1996	Dr. M. S. Pandian (now at Uni. of Podicherry)
3.	Power to the people	2001	MNES-UNDP-GEF, New Delhi
3.	Watershed and hydrology (in Hindi)	2003	Dr. V. C. Goyal (NIH Roorkee)
4.	Doyen of Technical Education – IIT Roorkee	2003	Prof. Vinod Kumar, IITR

5.	IITR	2003	Prof. I. M. Mishra
6.	IITR	2009	Prof. H. Sinvhal

LIST OF Ph.D. THESIS (SUPERVISED) COMPLETED / IN PROGRESS

Sr. No.	Name of the candidate	Title	Supervisor(s)	Status	Year
1.	J. Das	Fault Tectonics of Shillong Plateau and adjoining region based on remote sensing and field data	Dr. A. K. Saraf Prof. A. K. Jain Prof. A. R. Chandrasekaran	Awarded	1995
2.	A. Prakash	Geoenvironmental studies in Jharia Coal Field	Dr. A. K. Saraf Prof. R. S. Mittal Prof. R. P. Gupta	Awarded	1995
3.	R.M. Sundaram	Integrated GIS studies for delineation of earthquake-induced hazard zones in parts of Garhwal Himalayas	Dr. A. K. Saraf Prof. R. P. Gupta	Awarded	1998
4.	P. Roychoudary	Integrated Remote Sensing and GIS techniques for groundwater studies in part of Betwa Basin	Dr. A. K. Saraf	Awarded	1999
5.	S. K. Jain	Snowmelt runoff modelling for a Himalayan basin using remote sensing and GIS techniques	Dr. A. K. Saraf Dr. S. M. Seth Dr. P. Choudhury	Awarded	2001
6.	B. Sarma	Landuse Modelling in GIS for Bankura District	Dr. A. K. Saraf	Awarded	2003
7.	S. Choudhury	Development of Remote Sensing based Geothermic Techniques in Earthquake studies	Dr. A. K. Saraf	Awarded	2005
8.	Ajanta Goswami	Spatial techniques in snowcover and snowmelt runoff studies in western Himalaya	Dr. A. K. Saraf Dr. S. K. Jain, NIH	Awarded	2008
9.	Vineeta Rawat	Application of thermal remote sensing in earthquake precursor studies	Dr. A. K. Saraf Dr. J. D. Das, DEQ	Awarded	2011
10.	Yazdana Suzat	Geoinformatics in evaluating morphotectonics of Indo-Burman Frontal Fold Belt	Dr. A. K. Saraf Dr. J. D. Das, DEQ	Awarded	2011
11.	Kanika Sharma	SAR Interferometry technique in pre-seismic, co-seismic and post-seismic deformation studies	Dr. A. K. Saraf Dr. J. D. Das, DEQ	Started in Sept. 2010	In progress
12.	Riyaz Mir (now in GSI)	Remote Sensing and GIS techniques in snow-melt runoff modelling	Dr. A. K. Saraf Dr. S. K. Jain, NIH	Started in Sept. 2010	In progress
13.	Mrinmoy Das (now in GSI)	Geoinformatics in active tectonic and seismic hazard in parts of NE India	Dr. A. K. Saraf Dr. J. D. Das, DEQ	Started in Sept. 2011	In progress (part time)
14.	Suman K. Baral	Detection of seismic induced deformations using InSAR	Dr. A. K. Saraf Dr. J. D. Das, DEQ	Started in Sept. 2011	In progress
15	Susanta Boregohain	Bhramputra river morphology and seismotectonic relation	Dr. A. K. Saraf Dr. J. D. Das, DEQ	Started in January 2013	In progress
16	Gaurav Singh	Spatial technology for geomorphotectonics in part of Uttarakhand	Dr. A. K. Saraf Dr. J. D. Das, DEQ	Started in January 2013	In progress

LIST OF RESEARCH PROJECTS

1. Remote sensing investigations for hydrological exploration in parts of Garhwal Himalayan glaciers, Sponsored by D.S.T., New Delhi, 1993-1995, (as co-PI) (completed).

2. Land hazard evaluation and zonation mapping in Kumaon Himalaya for environmental regeneration and land-use planning, Sponsored by D.S.T., New Delhi, (as co-PI) (completed).

3. Integrated Remote Sensing and Geographic Information Systems (GIS) Technologies for the determination of snow-depth and snow-extent in the Himalayas, AICTE, New Delhi, (as PI) (completed).

4. Landuse Modelling in GIS for Bankura District, DST-NRDMS (UNDP), (as PI) (completed).

5. Development of satellite geothermic technique for earthquake related studies, AICTE, New Delhi, (as PI) (completed).

6. Assessment of impact of hydropower dams on vegetation using remote sensing and GIS, MoEF, (as co-PI) (completed).

7. Development of remote sensing based geothermic technique in earthquake studies, DST, New Delhi, (as PI) (completed).

8. Earthquake Hazard Assessment of Indo-Burman Tectonic Belt based on Spatial Technologies (RS & GIS), DST, (as Co-PI) (completed).

9. Development of North Indian Winter Fog GIS forecasting model, MHRD-IITR, (as PI) (completed).

10. Earthquake precursor research using satellite thermal infrared data, Indo-Russian (ILTP) – DST, New Delhi, (as PI) (completed).

11. Earthquake hazard assessment of Indo-Burman Tectonic Belt based on Spatial Technology. DST-MoES, New Delhi (as Co-PI) (completed).

12. SAR Interferometry in Surface Deformation Studies in Tectonically Active Parts of India, CSIR, New Delhi (as PI) (completed).

LIST OF CONSULTANCY PROJECTS

1. Interpretation of satellite images for land use mapping of the area north of Mangalore, Karnataka, Sponsored by Envirotech Consultants Pvt. Ltd., New Delhi, 1992 (completed) (worked as PI).

2. Petrographic investigations of sediments from Deb, Goi and Nahali rivers of Khargone District (M.P.), Sponsored by Narmada Valley Development Authority, (PWDNVDASSP), DN. NO. I, Barwani (M.P.), 1994 (completed) (worked as PI).

3. Geohydrological investigations of ash pond areas of Rihand, Singrauli and Vindhyachal projects of NTPC, Sponsored by N.T.P.C., New Delhi (completed) (worked as CO-PI).

4. Landuse mapping using IRS-1B LISS-I and LISS-II data of Hirakund area, Water and Power Consultancy Services (India) Ltd. WAPCOS), New Delhi (completed) (worked as CO-PI).

5. Interpretation of satellite images for Bijwasan-Meerut, Panipat -Saharanpur and Methura -Tundla Pipeline projects, Sponsored by Envirotech Consultants Pvt. Ltd., New Delhi, 1999 (completed) (worked as PI).

6. Interpretation of satellite data for landuse mapping of parts of Cuddalore, Mehsana and Tripura, Sponsored by Envirotech Consultants Pvt. Ltd., New Delhi, 2004 (completed) (worked as PI).

7. Interpretation of satellite data for landuse mapping of part of Visakhapatnam, Sponsored by Envirotech Consultants Pvt. Ltd., New Delhi, 2004 (completed) (worked as PI).

8. Environmental assessment of mining activities in parts of Uttarakhand, Govt. of Uttarakhand, Dehradun, (completed) (worked as Co-PI).

9. Evaluation of performance of GBPIHED, Almora, Min. of Environment and Forest, Govt. of India, (in progress) (worked as Co-PI).

10. Regional Geological & Remote Sensing Studies of HRT/Feeder Tunnel with ground check for Chamkharchu St-I and Kuri Gongri, NHPC, New Delhi, (worked as Co-PI).

11. Aeromagnetic Survey based structural and geological interpretation, Sesa Goa, Goa, (worked as Co-PI).

13. Geological mapping and cross section generation of HRT/Feeder Tunnel for Phunatsangchu-III, THDC, Rishikesh (worked as PI).

14. Feasibility study for the Road Tunnel across Sela Pass, Arunachal Pradesh, RITES Ltd., Gurgaon, (worked as PI).

Worked for consultancy projects of Alternate Hydro Energy Centre, Indian Institute of Technology Roorkee

1. UNDP-GEF India Hilly Hydro Zonal Plan Project, Ministry of Non-conventional Energy Sources, Govt. of India, New Delhi (completed).

2. Master plan preparation for power and irrigation in Darjeeling area, Darjeeling Plantation Association, Darjeeling (completed).

3. Preparation of drainage layout for Tronica City sponsored by U.P.S.I.C., Kanpur (completed).

4. Refresha Project : Development of a GIS based hydrological model for small hydro potential assessment, with Institute of Hydrology, U.K. sponsored by DFID, (completed).

5. Development of HP-SHP-GIS Database, Sponsored by HIMURJA, Shimla (completed).

6. Development of Nepal-SHP-GIS Database, Sponsored by Water Energy Commission Secretariat, Kathmandu, Nepal (completed).

7. Preparation of Detailed Project Report for Conservation and Management Plan of Dal & Nagin Lakes, Sponsored by Ministry of Environment and Forest, New Delhi (completed).

8. Development of Chattisgarh Small Hydro GIS database (completed).

9. Development of MIS and Computerization of UPID (in association with TCS, Lucknow) (completed).

10. Preparation of DPR for integrated sewage and waste management for abatement of pollution in rivers Kaukhai & Daya at Bhubaneshwar (completed).

11. Development of master plan for SHP Development in Narmada Basin of Madhya Pradesh (completed).

12. Kshipra River Conservation Project of Madhya Pradesh Govt. (Completed).

List of M.Tech/M. Sc./M.E. Dissertation (Master thesis) supervised

S.No.	Name of the student	Topic	Year
1.	Anish Kumar	Subsurface Coal-fire detection using Thermal Infrared data	1991
2.	R.M. Sundram	Flexible Interactive Remote Sensing Data Information System	1991
3.	Sandeep Ray	Application of Radiometric Data for Mineralogical Investigation	1991
4.	Anupam Sharia	Integrated interpretation of structures observed on remote sensing products and M.E.Q. data in Kumaon - Garhwal, Himalayas	1991
5.	Anmol Sharma	Landsat TM data application for delineating areas prone to earthquake induced liquefaction in north Bihar	1992
6.	S. Sengupta	Landsat TM data application for geological studies and estimation of ground temperature due to subsurface fires in parts of Jharia coalfield	1992
7.	S. K. Pandey	Analysis of step-drawdown pumping test data of hard rock aquifers from parts of Calicut and Malapuram Districts of Kerala	1992
8.	Pratul Saxena	Mutual relationship between MEQ data and structural features deciphered from IRS CCT's in parts of Garhwal Himalaya	1992
9.	Biswajit Sarma	Remote Sensing techniques for the geoenvironmental impact assessment caused by the brick-kiln industries around Roorkee	1993
10.	M. K. Dutta	Development of some advanced image processing techniques for remote sensing digital data	1993
11.	N. K. Srivastava	Technique of processing and interpreting groundwater data using GIS	1993
12.	Mullu Getta	Application of Geographic Information Systems in watershed management	1993
13.	M. Roy	Remote Sensing and GIS applications in Garhwal Himalayan Glaciers Studies	1994
14.	Kalpana Mishra	Integrated techniques of Remote Sensing and GIS in groundwater studies	1994
15.	B. Agarwal	Integrated GIS in earthquake studies	1994
16.	Indrani Phukan	Remote Sensing Applications in groundwater investigation of Singrauli and surrounding areas	1995
17.	Zothansanga	Application of GIS in irrigation water management	1995

18.	Sagar Mohanty	Development of a GIS-assisted FEM model of 2-dimensional ground water flow	1995
19.	Soukhin Tarafdar	Application of passive microwave data for snow-depth and snow-extent estimation in part of Himalayas	1997
20.	Pankaj Kumar	Evaluation of RGB-CMYK-HSB-HLS colour transformation techniques for satellite data enhancement	1998
21.	Rajeev Kumar	Structural & geomorphological interpretations of Siwaliks east of Hardwar using IRS-1C-LISS-III & PAN data	1998
22.	Amlan Mohanty	Fast flourier transform in image processing	1998
23.	Bhabani Shankar Misra	Quantitative aspects of false topography perception phenomena	1998
24.	Sudipta Sarkar	Application of passive microwave data for snow depth estimation in parts of Himalayas	1998
25.	Anurag Srivastava	Landuse modelling in GIS for Dwakeshar watershed, Bankura District, West Bengal	1998
26.	Anurag Singh Negi	Delineation of springs in a mountainous watershed using integrated remote sensing and GIS techniques	1998
27.	Vijay S.	Remote sensing and GIS in the study of landuse-hydrological relationship in Dwarkeshwar watershed, West Bengal	1999
28.	Pritish Bishoi	Remote sensing and GIS application in hydrological study of springs in a mountainous watershed	1999
29.	Parthapratim Ghosh	Reservoir impact assessment on vegetation and groundwater using remote sensing and GIS	2000
30.	Parijat Kundu	Integrated remote sensing and GIS based hydrologic modelling for groundwater recharge investigation	2000
31.	Sonali Mitra	Satellite data interpretation of geological structures for improvements of existing	2000
32.	Bishnu Kumar	Development of an integrated remote sensing and GIS technique for hydropower dams impact assessment on groundwater and vegetation	2001
33.	Ananda Shankar Roy	Remote sensing and GIS technique in the study of reservoir induced groundwater recharge in a hard rock terrain	2001
34.	Tanima Sarkar	Improvement of IIT-Roorkee GIS	2002
35.	Chandramani	Reservoir impact assessment on vegetation changes and catchment submergence using remote sensing and GIS techniques	2002
36.	Bhavani Prasad Mishra	Analysis of NOAA-AVHRR data in identification of temperature – elevation relationship and FTPP in hilly terrain	2003
37.	Sudipta Tapan Sinha	Development of FTPP correction techniques and their efficacies in satellite image interpretation	2003
38.	Suipta Dasgupta	Satellite Geothermic Techniques in earthquake studies	2005
39.	Hemlata	Mapping and analysis of fog in Northern India using NOAA-AVHRR satellite images	2005
40.	Tanmoy Dutta	Geo-morphotectonic and river pattern evaluation of Barak-Surma basin, NE-India using remote sensing and GIS Techniques	2006
41	Priyanka	Analysis of thermal remote sensing data in earthquake	2007

	Banerjee	studies	
42	Ajoy K. Bora	Remote Sensing and GIS for fog mapping and forecasting in Northern India	2008
43	K. K. Saifuddin	Analysis of rainfall data using GIS	2008
44	Ankita Biswas	SAR Interferometry technique in post-seismic deformation study	2009
45	Sandeep Chandra	Modelling of ground displacement through SAR Interferometry	2010
46	Roshan Bilung	Estimation of ground displacement due to an earthquake using SAR Interferometry	2011
47	Bhavya Maheshwari	Spatial and Temporal Analysis of Precipitation Over India	2012
48	Anil Bhise	Groundwater Prospect Evaluation Using Integrated Remote Sensing and GIS Technique in Hard Rock Terrain	2012
49	Mohammed Zia	SAR Interferometry for earthquake induced ground deformational studies	2013
50	Avinash Nirankari	GIS for the development of Geological Cross Sections	2013
51	Anamika Bharadwaj	GIS based temporal and spatial variability analysis of groundwater level in and around granite mine, Lalitpur district, Uttar Pradesh	2013
52	Vikas Kumar Srivastava	Seismic hazard assessment in Shillong region based on geospatial approach	2014
53	Ekesh Chandra	GIS approach in ground motion hazard estimation in Kangra region	2014
54	Pattapu Chaitanya	Identification of morphotectonic features of Dehradun region based on remote sensing and GIS	2015
54	Hitendra Singh Parikhar	Study of Kangra re-entrant and associated morphotectonic features based on remote sensing and GIS	2015
55	Srishti Dixit	Geo-Informatics in identification of groundwater recharge structures in Bundelkhand Region	2015
56	Eirin Kar	Study of geomorphic evidences of active faults in Kachchh area, Gujarat	2015
57	Archit Kumar Sahoo	False topographic perception phenomena seen on the satellite images of Mars	2015
58	Harsh Anurag	Identification of Geomorphology on Mars	2016
59	Palash Choudhury	Geoinformatics applications in fog studies and exploring possibilities of fog dispersion using air ionizing techniques	2016

List of Departmental Seminars guided

S.No.	Name of the student	Title of the Seminar	Year
1	R.M. Sundaram	Fundamentals of Geographic Information Systems	1990
2	Anish Kumar	Application of thermal remote sensing in natural hazard investigations	1991
3	S.K. Sengupta	Global Positioning Systems	1991
4	Utpal Borpujari	Use of the Global Positioning System in the studies of crustal deformation and earthquake prediction	1991
5	Mrinal Dutta	ERS-1 (European Remote Sensing Satellite-1)	1991
6	Neeraj Srivastava	Raster data compression techniques	1992
7	Mrinal Dutta	Expert Systems in Spatial Data Analysis	1992
8	Mrityunjay Roy	Remote Sensing as used in the exploration of ground water in hard rock terrains of India	1992
9	Mrityunjay Roy	Interpolation technique in Geographic Information System	1993
10	Chetan Chaturvedi	Satellite debris pollution in space	1993
11	Binayak Agarwal	Satellite monitoring of active volcanoes	1993
12	Binayak Agarwal	Triangulated irregular networks a terrain modelling technique	1993
13	Kalpana Mishra	Vector data structures in Geographic Information Systems	1993
14	Jai Kumar Misra	Effects of future climate change on water resources	1993
15	Jai Kumar Misra	Geology of the planet Mars	1994
16	Indrani Phukan	Remote Sensing applications in the study of earthquakes and volcanoes	1994
17	Sudhir K. Gupta	Radar Interferometry and its application in geology	1994
18	Sudhir K. Gupta	Passive microwave remote sensing in snow studies	1994
19	Anurag Srivastava	GIS Modelling	1997
20	Pradyut Nanda	Application of GIS in sediment yield modelling & watershed prioritisation	1997
21	Anurag Singh Negi	Remote Sensing of ice & snow	1997
22	Rajeev Kumar	Map Projections	1998
23	Jose Varghese	Snow Hydrology : Techniques used in the study of snow and prediction of snow melt	1998
24	Bhabani Shankar Misra	False Topography Perception Phenomena and its correction	1998
25	Amlan Mohanty	Fourier Transformation in Image Processing	1998
26	Pankaj Kumar	Radiometric correction of remote sensing data	1998
27	Sanjeev Kumar	Watershed consideration for engineering applications	1998
28	Vijay S.	Tools for watershed analysis	1998

29	Pritish Bisoyi	Hydrological methods for watershed analysis	1998
30	Vijay S.	Colour Space	1998
31	Pritish Bisoyi	Remote Sensing and GIS in groundwater echarge studies	1998
32	Parthapratim Ghosh	Data Fustion Technique for Remote Sensing Data Analysis	1999
33	Parijat Kundu	Remote Sensing Based Change Detection Techniques	1999
34	Ananda Shankar Roy	Data integration in GIS through overlay analysis	1999
35	Parthapratim Ghosh	Different impacts of reservoirs	2000
36	Parijat Kundu	Digital elevation models and their applications	2000
37	Bishnu Kumar	Crustal deformation studies using G.P.S.	2000
38	Ananda Shankar Roy	Impacts of reservoirs on groundwater and vegetation in hard rock terrain	2000
39	Chandramani	Depth perception with remote sensing data	2000
40	Sudipta Tapan Sinha	Orthophotographs and its applications	2001
41	Tanima Sarkar	Different interpolation techniques in GIS	2001
42	Bhavani Prasad Mishra	Georeferencing	2001
43	Sudipta Tapan Sinha	Nuclear waste disposal site selection using GIS	2002
44	Bhavani Prasad Mishra	Remote sensing analysis on Bhuj earthquake	2002
45	Sudipta Dasgupta	Nighttime remote sensing and applications	2004
46	Hemlata	Resolutions in remote sensing and GIS	2004
47	Tanmoy Dutta	Satellite Observations of Pre-earthquake thermal anomalies	2005
48	Priyanka Banerjee	Remote Sensing applications in lighting	2005
49	Ajay Krishna Bora	Applications of thermal remote sensing in earth sciences	2006
50	Shadab Raza	India Specific: Impact of Climate Change	2007
51	Ankita Biswas	SAR Interferometry technique in earthquake deformation studies	2008

LIST OF CONFERENCES, SHORT-TERM COURSES ETC. PARTICIPATED

1. 18th Annual Conference of the Remote Sensing Society, Sept. 15-17, 1992, University of Dundee, U.K.

2. National Seminar on Hydrological Hazards-Prevention & Mitigation, March 17-18, 1993, University of Roorkee,

3. National Seminar on Hydrological Hazards-Prevention & Mitigation, March 17-18, 1993, University of Roorkee

4. Seminar on Himalayan Geology & Geophysics, March 22-25, 1993, Wadia Institute of Himalayan Geology, Dehra Dun

5. 9th Himalaya-Karakorum-Tibet Workshop, 1-4 April, 1994 Kathmandu, Nepal

6. American Geophysical Union Winter Meeting, Dec. 1994, San Fransico, U.S.A.

7. First International Conference on Renewable Energy - Small Hydro, Hydro Centenary - 1997, Hyderabad, 1997.

8. International Conference on Small Hydro Power Systems, British Council Division, New Delhi, 1997.

9. Conference on Geomatics in Disaster Management, Indian Society of Geomatics, Indian Institute of Remote Sensing, Dehradun, 1997.

10. National Symposium on GIS for Business and Environmental Planning, University of Delhi (South Campus), New Delhi, 1997.
11. International Symposium on Emerging Trends in Hydrology, Department of Hydrology, University of Roorkee, Roorkee, 1997.

12. 11th Symposium on Earthquake Engineering, Department of Earthquake Engineering, University of Roorkee, Roorkee, December 17-19, 1998.
13. Indian Remote Sensing Society Conference, 1999, organized by Indian Space Research Organisataion, Bangalore, January,19-21, 1999.

14. Seminar on "The March 29, 1999 Chamoli Earthquake and its Impact (WOCEI-99)", Wadia Institute of Himalayan Geology, Dehradun, October 22-23, 1999.

15. Seminar on "Lessons for Architects & Engineers from Recent Indian Earthquakes, Institution of Engineers (India), Roorkee, January 6-7, 2000.

16. Map India – 2001, New Delhi, February 7-9, 2001.

17. Seminar on Dehradun (Uttaranchal) The National Remote Sensing Hub, held on 1st December, 2001 at DEAL, Dehra Dun, The Institute of Electronics & Telecommunication Engineers, Local Center, Dehradun.

18. Refresher Course on Remote Sensing and GIS applications in Earth Sciences, 17th December 2001 to 12th January 2002 at Department of Geography, University of Pune.

19. Map India – 2002, New Delhi, February 6-8, 2002.

20. ESRI India – 2002, New Delhi, January 22-23, 2002.

21. SEE5, Tehran, Iran (May 12-17, 2007)

22. NDM, Esfhan, Iran (May 7-10, 2007)

23. Map India 2008, NOIDA (Feb. 6-8, 2008)

24. VESTO 2009, Chiba, Japan (March 26-28, 2009)

25. National Seminar on Geoscience for Society and Environment on 20th February 2010 organized by the Department of Geology, Utkal University, Bhubaneswar.

List of Special Lectures delivered in various workshops, courses and in public gatherings

1. Remote Sensing Applications in Geology, at Centre for Remote Sensing, UOR, Roorkee, 1993.

2. Introduction to GIS, at Centre for Remote Sensing, UOR, Roorkee, 1993.

3. Remote Sensing and GIS applications in ground water exploration, at Punjab Remote Sensing Centre, PAU, Ludhiana, 1994.

4. Digital Image Processing and enhancement, involving scope and examples from mineral resources, Indian Geological Congress, UOR, Roorkee, 1995.

5. GIS - Scope and Methodology, Indian Geological Congress, UOR, Roorkee, 1995.

6. Data Integration in a GIS platform and its Efficacy, University of Pune, Pune, 1996.

7. Use of modern techniques for planning of small hydro projects, U.P. Administration Academy, Nainital, July, 1996.

8. Delineation of catchments, Introduction of GIS and data input on GIS, Workshop on GIS based identification of small hydro sites, Alternate Hydro Energy Centre, University of Roorkee, January 30-31, 1998.

9. Introduction to Remote Sensing, Workshop on GIS based identification of small hydro sites, Alternate Hydro Energy Centre, University of Roorkee, January 30-31, 1998.

10. Remote sensing and GIS applications in EIA, Course on Environmental Impact Assessment, Centre of Continuing Education, University of Roorkee, February 16-21, 1998.
11. Delineation of catchments, Introduction of GIS and data input on GIS, Workshop on GIS based identification of small hydro sites, Assam State Remote Sensing Application Centre, February 20-21, 1998.

12. Introduction to Remote Sensing, Workshop on GIS based identification of small hydro sites, Alternate Hydro Energy Centre, Assam State Remote Sensing Application Centre, February 20-21, 1998.

13. Application of remote sensing and GIS techniques in Hydrology, Training Course on Application of Remote Sensing and GIS techniques in Hydrology, National Institute of Hydrology, 2-7 March, 1998.

14. Integrated Remote Sensing and GIS technique for groundwater exploration, Workshop on Remote Sensing and GIS for Resource Management and Development, Geoinformatics Division, Department of Civil Engineering, Indian Institute of Technology, Kanpur, 7th November 1998.

15. Application of Remote Sensing and GIS in earthquake studies, Workshop on Remote Sensing and GIS for Resource Management and Development, Geoinformatics Division, Department of Civil Engineering, Indian Institute of Technology, Kanpur, 7th November, 1998.

16. Remote Sensing and GIS Applications in Groundwater Exploration, Post Graduate Diploma Course in Geosciences, Indian Institute of Remote Sensing, Dehra Dun, 17th December, 1998.

17. Advance digital image processing techniques, M.Sc. Students of Department of Geology, University of Delhi, 8th February 1999.

18. Introduction to Geographic Information System (GIS), M.Sc. Students of Department of Geology, University of Delhi, 8th February 1999.

19. Application of Remote Sensing and GIS in groundwater studies, M.Sc. Students of Department of Geology, University of Delhi, 9th February 1999.

20. Remote Sensing and GIS applications in: a. Springs delineation b. Earthquake studies, M.Sc. Students of Department of Geology, University of Delhi, 9th February, 1999.

21. Introduction to GIS-I, Training Programme on Digital Mapping Technology organised by Department of Civil Engineering, University of Roorkee, 15-20 March, 1999.

22. Introduction to GIS-II, Training Programme on Digital Mapping Technology organised by Department of Civil Engineering, University of Roorkee, 15-20 March 1999.

23. Introduction to GIS-III, Training Programme on Digital Mapping Technology organised by Department of Civil Engineering, University of Roorkee, 15-20 March 1999.

24. Introduction to GIS-IV, Training Programme on Digital Mapping Technology organised by Department of Civil Engineering, University of Roorkee, 15-20 March 1999.

25. GIS based planning of Small Hydro Projects, International Course on Planning, Design & Implementation of Small Hydro Power Projects, organised by Alternate Hydro Energy Centre, University of Roorkee, Roorkee, 15-25 March 1999.

26. Training Course on Remote Sensing and GIS applications in Water Resources, National Institute of Hydrology, Roorkee, December 13-24, 1999.

27. Remote Sensing and GIS applications in irrigation and water management, Training Course for Irrigation Trainees, Irrigation Research Institute, Roorkee, June, 2000.

28. Remote Sensing Techniques in Groundwater Development, Short Term Course on Groundwater Recharge, Assessment & Quality, Department of Hydrology, University of Roorkee, July 10 to July 29, 2000.

29. GIS and Remote Sensing based planning of Small Hydro Projects, International Course on Planning, Technology Selection and Implementation of Small Hydro Power Projects, organised by Alternate Hydro Energy Centre, University of Roorkee, Roorkee, 13-23 February 2001.

30. Applications and limitations of Remote Sensing and GIS technologies, National Seminar on Application of New Techniques in Modern Geography, organised by the Department of Geography, University of Pune, Pune, 26-27 February 2001.

31. Remote sensing and GIS applications in geology, Training Programme for Trainee Officers (Engineering Geology), National Hydroelectric Power Corporation, Faridabad, 27.08.2001 – 21.09.2001.

32. Remote Sensing and GIS Applications in Earthquake Studies, Key Note Lecture delivered in Seminar on Dehradun (Uttaranchal) The National Remote Sensing Hub, held on 1st December, 2001 at DEAL, Dehra Dun, organized by The Institute of Electronics & Telecommunication Engineers, Local Center, Dehradun.

33. Overview of GIS, Refresher Course on Remote Sensing and GIS applications in Earth Sciences, held between 17th December 2001 to 12th January 2002 at Department of Geography, University of Pune.

34. Non-spatial information and various types of DBMS, Refresher Course on Remote Sensing and GIS applications in Earth Sciences, held between 17th December 2001 to 12th January 2002 at Department of Geography, University of Pune.

35. Hardware and software requirements of GIS, Refresher Course on Remote Sensing and GIS applications in Earth Sciences, held between 17th December 2001 to 12th January 2002 at Department of Geography, University of Pune.

36. GIS based planning of small hydro projects, International Couse on Cost Effective Planning and Design of Small Hydro Projects, held between 5-15th February 2002 at Alternate Hydro Energy Centre, Indian Institute of Technology, Roorkee.

37. False Topographic Perception Phenomena and its correction, 8th October 2002 at Centre for Environmental Studies, University of Dundee, U.K.

38. Basics of Geographic Information System, Invited Lecture delivered at Department of Geology, University of Delhi, Delhi on 20th Feb. 2003.

39. Colour space and its implications in satellite data fusion and transformations, Invited Lecture delivered at Department of Geology, University of Delhi, Delhi on 20th Feb. 2003.

40. False Topographic Perception Phenomena, its correction methods and new developments, Invited Lecture delivered at Department of Geology, University of Delhi, Delhi on 20th Feb. 2003.

41. GIS, Remote Sensing and GPS applications in small hydropower planning, Invited Lecture delivered at International Course on Technology Selection for Small Hydro Development, Feb. 18-28, 2003 organised by AHEC, IIT Roorkee.

42. Remote Sensing and GIS in earthquake studies, Invited Lecture delivered in Seismic Microzonation of Hilly Areas, An Integrated, Comphrehensive Traning Programme organised at CBRI, Roorkee, Feb. 11-15, 2003.

43. Remote Sensing and GIS applications in earthquake studies, Invited Lecture delivered at GIS Institute, NOIDA on 5th April 2003.

44. Establishment of NOAA-HRPT Satellite Earth Station at IITR and NOAA-AVHRR data application in earthquake studies, Invited Lecture delivered at Forest Survey of India, Dehra Dun on 2nd May 2003.

45. GIS applications in Small Hydropower Development, Invited Lecture delivered at National Workshop on Small Hydropower Development: Opportunities and Challenges" during 5-7 June 2003 at Manali organized by AHEC, IIT Roorkee.

46. Use of modern tools: GIS, GPS and altimeters for planning and investigation of SHP, Invited Lecture delivered at International Training Course on Small Hydropower Development, during 10-22 Februry 2004, AHEC, IIT Roorkee.

47. Fundamental of Digital Image Processing, Invited Lecture delivered at Department of Geology, University of Delhi, Delhi on 19th Feb. 2004.

48. Colour concept in DIP and its applications, Invited Lecture delivered at Department of Geology, University of Delhi, Delhi on 19th Feb. 2004.

49. False Topographic Perception phenomena and its correction techniques, Invited Lecture delivered at Department of Geology, University of Delhi, Delhi on 19th Feb. 2004.

50. Remote Sensing, GIS and GPS applications in groundwater recharge studies, invited Lecture delivered in "Interactive Workshop on Water Conservation" organised by National Institute of Hydrology, Roorkee between 13-14 April, 2004.

51. Remote Sensing and GIS applications in groundwater recharge studies, invited Lecture delivered at National Institute of Hydrology in a special course on "Remote Sensing and GIS applications in Hydrology", NIH, held between 14-19 June 2004.

52. Remote Sensing and GIS techniques in groundwater recharge studies, invited lecture delivered in a short term course on "Engineering Geological Consideration for Artificial Recharge" organised by Department of Hydrology, IIT Roorkee between 12-23 July, 2004.

53. Remote Sensing and GIS techniques in groundwater recharge studies, invited lecture delivered in a short term course on "Engineering Geological Consideration for Artificial Recharge" organised by Department of Hydrology, IIT Roorkee, 23 Sept., 2004

54. Thermal remote sensing in earthquake studies, Proceedings of Third International Conference: GIS-2004 held at Bahrain between 27-29 September 2004, organised by the Bahrain Society of Engineers, Bahrain, pp.19-33.

55. Use of Modern Tools: GIS, GPS and altimeters for planning and investigation of SHP, lecture delivered in a short term International Course on Grid Based Small Hydropower Development, organised by AHEC, IITR during 27 Jan. – 09 Feb. 2005.

56. Thermal Remote Sensing Applications in Earthquake Studies, Special Lecture delivered in a short term course on Earthquake Engineering and Building Structures, organized by DEQ, IITR during 29 August – 03 September 2005.

57. Basics of GPS and GIS, Special Lecture delivered in the workshop on Himalayan School Earthquake Laboratory Programme (HIM-SELP) to train school teachers of Uttaranchal and Himachal Region held at Wadia Institute of Himalayan Geology, Dehra Dun, delivered on 30 September 2005.

58. Introduction to GPS and its applications in Earth Sciences, Special Lecture delivered on 16th March 2006 in UGC sponsored Refresher Course for Earth Sciences Faculty held at Department of Geography, University of Pune.

59. DEM and its derivatives and their application in Quantitative Geomorphology, Special Lecture delivered on 16th March 2006 in UGC sponsored Refresher Course for Earth Sciences Faculty held at Department of Geography, University of Pune.

60. RS and GIS applications in groundwater studies, Special Lecture delivered on 17th March 2006 in UGC sponsored Refresher Course for Earth Sciences Faculty held at Department of Geography, University of Pune.

61. RS and GIS applications in earthquake studies, Special Lecture delivered on 17th March 2006 in UGC sponsored Refresher Course for Earth Sciences Faculty held at Department of Geography, University of Pune.

62. False Topographic Perception Phenomena and its correction techniques, Special Lecture delivered on 18th March 2006 in UGC sponsored Refresher Course for Earth Sciences Faculty held at Department of Geography, University of Pune.

63. Introduction to GPS-I, Special Lecture delivered on 26th April 2006 in a UREDA sponsored Training Course for the Project Officers held at AHEC, IIT Roorkee between 26-29 April 2006.
64. Introduction to GPS-II, Special Lecture delivered on 26th April 2006 in a UREDA sponsored Training Course for the Project Officers held at AHEC, IIT Roorkee between 26-29 April 2006.

65. Introduction to GIS: What is GIS? Who can use GIS? Special Lecture delivered on 26th April 2006 in a UREDA sponsored Training Course for the Project Officers held at AHEC, IIT Roorkee between 26-29 April 2006.

66. Components of GIS, Hardware and Software requirements, Special Lecture delivered on 26th April 2006 in a UREDA sponsored Training Course for the Project Officers held at AHEC, IIT Roorkee between 26-29 April 2006.

67. GIS Applications in SHP Development, Special Lecture delivered on 26th April 2006 in a UREDA sponsored Training Course for the Project Officers held at AHEC, IIT Roorkee between 26-29 April 2006.

68. GIS Applications in general, Special Lecture delivered on 26th April 2006 in a UREDA sponsored Training Course for the Project Officers held at AHEC, IIT Roorkee between 26-29 April 2006.

69. Introduction to GIS, Special Lecture delivered on 24th May 2006 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between May 24-28, 2006.

70. Different components of GIS and data organization, Special Lecture delivered on 24th May 2006 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between May 24-28, 2006.

71. Different components of GIS and data organization, Special Lecture delivered on 24th May 2006 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between May 24-28, 2006.

72. Different components of GIS and data organization, Special Lecture delivered on 24th May 2006 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between May 24-28, 2006.

73. Introduction to GPS, Special Lecture delivered on 24th May 2006 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between May 24-28, 2006.

74. GPS: Errors, corrections and DGPS, Special Lecture delivered on 24th May 2006 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between May 24-28, 2006.

75. Remote Sensing and GIS applications in Earthquake Studies, Special Lecture delivered on 12th July 2006 in a course on "Earthquake Risk Management" sponsored by Ministry of Home Affairs for PWD Officers, organised by DEQ, IIT Roorkee.

76. Spatial technologies in forest fire studies, Special Lecture delivered on 23rd August 2006 in a course on "Forest Fire Management", organised by DMMC-NIDM-FRI Dehradun between 23-25 August 2006 at FRI Dehradun.

77. GIS & Remote Sensing in SHP Development, Special Lecture delivered on 31st January 2007 in a international course on "Small Hydropower: Assessment and Development", organised by AHEC, IIT Roorkee between 30 January – 10 February 2007 at AHEC, IIT Roorkee.

78. GPS & Altimeter in SHP Development, Special Lecture delivered on 1st February 2007 in a international course on "Small Hydropower: Assessment and Development", organised by AHEC, IIT Roorkee between 30 January – 10 February 2007 at AHEC, IIT Roorkee.

79. Remote Sensing and GIS applications in earthquake studies, Special Lecture delivered on 24th July 2007 in Department of Geology and Geophysics, Indian Institute of Technology Kharagpur.

80. Introduction to GIS, Special Lecture delivered on 13th August 2007 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between August 13-17, 2007.

81. Different components of GIS and data organization, Special Lecture delivered on 13th August 2007 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between August 13-17, 2007.

82. Introduction to GPS, Special Lecture delivered on 14th August 2007 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between August 13-17, 2007.

83. GPS: Errors, corrections and DGPS, Special Lecture delivered on 14th August 2007 in a USAID-India sponsored Training Course entitled "GIS Based Distribution System Planning Analysis and Asset Management held at CED, IIT Roorkee between August 13-17, 2007.

84. Remote Sensing and GIS applications in Natural Disaster Investigations, Special Lecture delivered on 7th April 2008 in a DST sponsored Training Course organized by Lal Bahadur Shastri National Academy of Administration, Mussoorie.

85. Introduction to GPS-I, Special Lecture delivered 18th August 2008 in Teachers Training Course organized by Department of Earth Sciences, Manipur University, Imphal.

86. Introduction to GPS-II, Special Lecture delivered 18th August 2008 in Teachers Training Course organized by Department of Earth Sciences, Manipur University, Imphal.

87. Different types of Digital Elevation Models and their derivatives, Special Lecture delivered 19th August 2008 in Teachers Training Course organized by Department of Earth Sciences, Manipur University, Imphal.

88. False Topographic Perception Phenomena in Remote Sensing data and its correction techniques, Special Lecture delivered 18th August 2008 in Teachers Training Course organized by Department of Earth Sciences, Manipur University, Imphal.

89. Remote Sensing and GIS applications in earthquake studies, Special Lecture delivered 18th August 2008 in Teachers Training Course organized by Department of Earth Sciences, Manipur University, Imphal.

90. Introduction to Arc View GIS and its applications in water resources, Special Lecture delivered on 21st October 2008 in a Training Course on "Applications of Remote Sensing and GIS in Water Resources Management" organized by National Institute of Hydrology, Roorkee.

91. Thermal Remote Sensing in Earthquake Studies, Special Lecture delivered on 27th March 2009 in Center for Environmental Remote Sensing, Chiba University, Japan.

92. Remote Sensing and GIS applications in Earthquake Studies, Special Lecture delivered on 01st April 2009 in a short term course on "Earthquake Disaster Mitigation" organized by SAARC Disaster Management Centre and Centre of Excellence in Disaster Mitigation & Management, IIT Roorkee.

93. Thermal Remote Sensing in Earthquake Studies, delivered Chief Guest presentation on 22th April 2009 in Central Building Research Institute Roorkee on 'World Earth Day'.

94. Earthquake precursor and thermal remote sensing, delivered Special Lecture on 18th December 2009 at Indian Institute of Remote Sensing, Dehradun.

95. Case studies on thermal data applications for earthquake studies, delivered Special Lecture on 18th December 2009 at Indian Institute of Remote Sensing, Dehradun.

96. Remote Sensing and GIS Applications in Earthquake Studies, delivered Special Lecture on 22nd December 2009, in the Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie.

97. Winter fog over the Indo-Gangetic Plains: Mapping and Modelling using Remote Sensing and GIS" in the ICOACCE-10 on 12th February 2010 (jointly organized by the Techbuddy Consulting & GITS, Udaipur.

98. Remote Sensing Observations of Earthquake Thermal Precursors" in the National Seminar on Geoscience for Society and Environment on 20th February 2010 organized by the Department of Geology, Utkal University, Bhubaneswar.

99. Introduction to Arc View / Arc GIS in training course on Applications of Remote Sensing and GIS in Water Resources Management held during 08-12th March 2010 at NIH, Roorkee.

100. Winter fog over the Indo-Gangetic Plains: Mapping and Modelling using Remote Sensing and GIS in Institution of Engineers of India, Roorkee Local Chapter, Roorkee which celebrated Earth Day on 22nd April 2010.

101. Remote Sensing and GIS: Study and Management of Natural Disasters, delivered Special Lecture on 03nd June 2010, in the Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie.

102. Thermal Remote Sensing in Earthquake Studies, delivered Special Lecture on 29th August 2010 in University of Petroleum and Energy Studies, Dehradun.

103. False Topographic Perception Phenomena in Remote Sensing data and its correction techniques, delivered Special Lecture on 29th August 2010 in University of Petroleum and Energy Studies, Dehradun.

104. Remote Sensing and GIS Technologies in Earthquake Studies, Short Term Course on Earthquake Risk Mitigation, organized by SAARC Disaster Management Centre and Centre of Excellence in Disaster Mitigation & Management, IIT Roorkee, Sept. 15-21, 2010 at IIT Roorkee.

105. Remote Sensing and GIS in Lake Studies, Short Term Course on Hydrological Investigations for conservation and management of lakes, organized by NIH, Roorkee, 1-3 March 2011.

106. Advances in Remote Sensing and GIS Technologies in Earthquake Studies, Keynote Speech in the 5th SASTech symposium held in Mashad, Iran during 12-14 May 2010.

107. GIS Database Management System, Special Lecture in a training course “Applications of Remote Sensing and GIS in Water Resources Management” organized by NIH, Roorkee, 30 May – 10 June 2011.

108. Map Projections in GIS, Special Lecture in a training course “Applications of Remote Sensing and GIS in Water Resources Management” organized by NIH, Roorkee, 30 May – 10 June 2011.

109. Remote Sensing and GIS techniques in Earthquake Studies, Special Lecture delivered at Institute of Geology & Geophysics, Chinese Academy of Sciences, Beijing, China, 24th June 2011.

110. Advances in Remote Sensing and GIS Technologies in Earthquake Studies, Special Lecture delivered at Centre for Earth Observation and Digital Earth, Chinese Academy of Sciences, Beijing, China, 08th July 2011.

111. False Topographic Perception Phenomena in Remote Sensing data and its correction techniques Special Lecture delivered at Institute of Spatial Information Sci. & Tech., Beijing Normal University, Beijing, China, 10th July 2011.

112. Remote Sensing and Earthquake Thermal Precursors, Special Lecture delivered at Institute of Earthquake Science, China Earthquake Administration, Beijing, China, 14th July 2011.

113. Remote Sensing and GIS Technologies in Groundwater Recharge Studies, delivered Special Lecture on 01st Nov. 2011, in the Lal Bahadur Shastri National Academy of Administration (LBSNAA), Mussoorie.

114. Remote Sensing and GIS Technologies in Groundwater Recharge Studies, delivered Distinguish Guest Lecture in the Department of Geology, University of Patna in the National Seminar on "Management of groundwater resources in India with special reference to Bihar" between 18-19th March 2013.

115. The organising committee of INSPIRE INTERNSHIP SCIENCE CAMP (sponsored by the Department of Science & Technology, Government of India) invited to deliver a Special Lecture “False Topographic Phenomena and its Correction Techniques” at Raj Kumar Goel Engineering College, Pilkhuwa, Ghaziabad on 14th May 2013.

116. The organising committee of 1st International Conference "Disasters, Natural Resource Management and Socio-economic Development" of APG organised by Department of Geography, Kurukshetra University, Kurukshetra to deliver a Keynote address entitled "Is winter fog is menace or natural disaster?" on 4th Oct 2013.

117. The organising committee of INSPIRE INTERNSHIP SCIENCE CAMP (sponsored by the Department of Science & Technology, Government of India) invited to deliver a Special Lecture “*Geology: Fundaments & Importance*” at Bharat Institute of Technology, Meerut on 29th Nov. 2013.

118. Remote Sensing and GIS Technologies in Groundwater Recharge Studies, delivered Special Lecture on 24st Dec. 2013 at Regional Remote Sensing Service Centre, Jodhpur.

119. False Topographic Phenomena and its Correction Techniques, delivered Special Lecture on 24st Dec. 2013 at Regional Remote Sensing Service Centre, Jodhpur.

120. Geo-informatics in Fog Monitoring and Modelling in Indo-Gangetic Plain for Economic Benefits on different sectors in the plains of Uttarakhand, delivered Keynote Address on 15th Feb. 2014 in National Conference on ‘Revisiting Development Paradigms for Uttarakhand’, organised by Department of HSS, IIT Roorkee.

121. False topographic perception phenomena in remote sensing and its correction, delivered Special Lecture on 12th March 2014 at Department of Geology, University of Lucknow.

122. Geospatial technology in earthquake studies, delivered *'Prof. R. S. Chaturvedi Memorial Lectures*' on 13th March 2014 at Remote Sensing Applications Centre, Uttar Pradesh.

123. Winter fog over the Indo-Gangetic Plains: Mapping and Modelling, delivered *'Prof. R. S. Chaturvedi Memorial Lectures*' on 13th March 2014 at Remote Sensing Applications Centre, Uttar Pradesh.

124. Remote Sensing and GIS Technologies in Earthquake Studies, delivered in the International Course on 'Techniques for Earthquake Resistant Design & Retrofitting in South Asia, organized by SAARC Disaster Management Centre, Centre of Excellence in Disaster Mitigation & Management and Department of Earthquake Engineering, IIT Roorkee, between 19-30th March, 2014 (lecture delivered on 21st March 2014).

125. Winter Fog in North India, has delivered a keynote paper in the International Symposium on Geoinformatics (IGS-2014) held in Kuala Lumpur, Malaysia between 14-15th Oct. 2014.

126. Geoinformatics in Earthquake Studies, delivered a Special Lecture in by the Department of Civil Engineering, University of Malaya, Kuala Lumpur, Malaysia on 16th Oct. 2014.

127. Role of Remote Sensing and GIS in Hilly areas Special Lecture delivered in Geospatial Education and Training Workshop on Management of Water Resources, Glaciers and Climate Change with Special Reference to Uttarakhand held in National Institute of Hydrology, Roorkee between 01-03rd Nov. 2014.

128. *Fog Hazard of Indo-Gangetic Plain: Mapping, Modelling and Dispersion Techniques* delivered in the Seminar on *Geospatial Technology in Natural Resource Management* jointly organized by Indian Society of Remote Sensing and Punjab Remote Sensing Centre, Ludhiana between 17-18th March 2015.

129. *False Topographic Perception Phenomena and its correction* delivered Popular Talk in the Seminar on *Geospatial Technology in Natural Resource Management* jointly organized by Indian Society of Remote Sensing and Punjab Remote Sensing Centre, Ludhiana between 17-18th March 2015.

130. Geoinformatics in Earthquake Studies delivered Popular Talk in the Seminar on *Geospatial Technology in Natural Resource Management* jointly organized by Indian Society of Remote Sensing and Punjab Remote Sensing Centre, Ludhiana between 17-18th March 2015.

131. Role of Remote Sensing and GIS in Hilly areas Special Lecture delivered in Geospatial Education and Training Workshop on Management of Water Resources, Glaciers and Climate Change with Special Reference to Uttarakhand held in National Institute of Hydrology, Roorkee between 24-26 May 2015.

132. Remote Sensing for Geologists, Special Lecture delivered in Department of Geology, HNB Garhwal University Campus, Badshahi Thaul, Tehri Garhwal between 29-30th Sept. 2015.

133. Geographic Information Systems, Special Lecture delivered in Department of Geology, HNB Garhwal University Campus, Badshahi Thaul, Tehri Garhwal between 29-30th Sept. 2015.

134. Geoinformatics in Earthquake Studies, Special Lecture delivered in Department of Geology, HNB Garhwal University Campus, Badshahi Thaul, Tehri Garhwal between 29-30th Sept. 2015.

135. False Topographic Perception Phenomena and its correction, Special Lecture delivered in Department of Geology, HNB Garhwal University Campus, Badshahi Thaul, Tehri Garhwal between 29-30th Sept. 2015.

136. Fog Hazard of Indo-Gangetic Plain: Mapping, Modelling and Dispersion Techniques, Special Lecture delivered in Department of Geology, HNB Garhwal University Campus, Badshahi Thaul, Tehri Garhwal between 29-30th Sept. 2015.

137. Remote Sensing and GIS Technologies in Groundwater Recharge Studies, Special Lecture delivered in Department of Geology, HNB Garhwal University Campus, Badshahi Thaul, Tehri Garhwal between 29-30th Sept. 2015.

138. Geoinformatics in Earthquake Studies, Special Lecture delivered in Department of Remote Sensing BIT Mesra, Ranchi, Jharkhand on 11th Oct. 2015.

139. Hydrogeomorphological Map Making with use of Remote Sensing & GIS techniques, Special Lecture delivered in Two Days Training Workshop entitled "*Application and Uses of Hydro-geomorphological Maps for Groundwater Perceptions*" held between 19-20th February 2016 in MeBaDA, Shillong.

140. Use & Application of Hydro-geomorphological Map in Ground Water perception an aid for Borehole Site selection, Special Lecture delivered in Two Days Training Workshop entitled "*Application and Uses of Hydro-geomorphological Maps for Groundwater Perceptions*" held between 19-20th February 2016 in MeBaDA Shillong.

141. Use and applications of HGMs in selecting artificial recharging sites (Check Dams) etc., Special Lecture delivered in Two Days Training Workshop entitled "*Application and Uses of Hydro-geomorphological Maps for Groundwater Perceptions*" held between 19-20th February 2016 in MeBaDA Shillong.

142. Case study of RS-GIS based Ground Water prospects Maps, Special Lecture delivered in Two Days Training Workshop entitled "*Application and Uses of Hydro-geomorphological Maps for Groundwater Perceptions*" held between 19-20th February 2016 in MeBaDA Shillong.

143. Hydrogeomorphological Map Making with use of Remote Sensing & GIS techniques, Special Lecture delivered in Two Days Training Workshop entitled "*Application and Uses of Hydro-geomorphological Maps for Groundwater Perceptions*" held between 22-23th February 2016 in Guwahati.

144. Use & Application of Hydro-geomorphological Map in Ground Water perception an aid for Borehole Site selection, Special Lecture delivered in Two Days Training Workshop entitled "*Application and Uses of Hydro-geomorphological Maps for Groundwater Perceptions*" held between 22-23th February 2016 in Guwahati.

145. Use and applications of HGMs in selecting artificial recharging sites (Check Dams) etc., Special Lecture delivered in Two Days Training Workshop entitled "*Application and Uses of Hydro-geomorphological Maps for Groundwater Perceptions*" held between 22-23th February 2016 in Guwahati.

146. Case study of RS-GIS based Ground Water prospects Maps, Special Lecture delivered in Two Days Training Workshop entitled "*Application and Uses of Hydro-geomorphological Maps for Groundwater Perceptions*" held between 22-23th February 2016 in Guwahati.

147. Geoinformatics in Earthquake Studies, Invited Lecture delivered at Department of Geography, University of Pune, Pune, 05th March 2016.

148. False Topographic Perception Phenomena in Remote Sensing data and its correction techniques, Invited Lecture delivered at Department of Geography, University of Pune, Pune, 05th March 2016.

149. Geo-Informatics in identification of potential groundwater recharge sites in Bundelkhand Craton, Madhya Pradesh Council of Science and Technology, Bhopal, 17th March 2016.

150. False Topographic Perception Phenomena in Remote Sensing data and its correction techniques, Madhya Pradesh Council of Science and Technology, Bhopal, 17th March 2016.

151. Potential water harvesting sites along quartz reefs, invited presentation in Min. of Water Resources (RD & GR) Project Meeting held in National Institute of Hydrology, Roorkee between 25-26th April 2016.

152. Geoinformatics in earthquake studies, Invited Lecture delivered at Kharazmi University (Tarbiat Moallem University), Tehran, 17th May 2016.

153. False Topographic Perception Phenomena in Remote Sensing Data and its correction techniques, Invited Lecture delivered at Tarbiat Modares University, Tehran, 17th May 2016.

154. Satellite based detection of pre-earthquake thermal anomalies, Invited Lecture delivered at Institute of Geophysics, University of Tehran, Tehran, 18th May 2016.

155. Applications of Remote Sensing and GIS Techniques in Earthquake Studies, Invited Lecture delivered at Geological Survey of Iran, Tehran, 21st May 2016.

156. Geoinformatics for Groundwater Recharge studies**,** Invited Lecture delivered at Kharazmi University (Tarbiat Moallem University), Karaz, Iran, 23rd May 2016.

157. Satellite based detection of pre-earthquake thermal anomalies and future perception, Invited Lecture delivered at Chamran University, Ahvaz, Iran, 25th May 2016.

158. Geoinformatics in Earthquake Studies, Invited Lecture delivered at Department of Remote Sensing and GIS, University of Tehran, Tehran, Iran, 28th May 2016.
