



## CURRICULUM VITAE

### Jayanta Kumar Ghosh

Civil Engineering Department  
(Geomatics Engineering Group)  
Indian Institute of Technology Roorkee  
UTTARAKHAND 247 667 INDIA  
Telephone: +91-1332-285429, 285456  
Mobile: +91- 9411111721  
Fax : +91-1332-273560, 275568  
E-mail : [gjkumfce@iitr.ac.in](mailto:gjkumfce@iitr.ac.in); [gjkumfce@gmail.com](mailto:gjkumfce@gmail.com)  
URL: <http://www.iitr.ac.in/~CE/gjkumfce>

Born: 1962- Guwahati, India  
Nationality: Indian

### Present Position

*Associate Professor* (Geomatics Engineering) Indian Institute of Technology Roorkee, India.

### Education

2007	Post-doctoral research work at University of Applied Sciences Karlsruhe Germany.
1997	Ph.D. in Civil Engineering, Indian Institute of Technology Roorkee India.
1990	M.Tech in Civil Engineering, Indian Institute of Technology Kanpur, India
1984	B.E in Civil Engineering, Indian Institute of Engineering Science and Technology Shibpur, India.

### Academic Positions

2012 – Present	Associate Professor, Department of Civil Engineering, I I T Roorkee, India
2009	Visiting Professor, Instituto Superior de Estatística e Gestão de Informação (ISEGI), Portugal.
1998-2012	Assistant Professor, Department of Civil Engineering, I I T Roorkee, India.
1985 –1998	Lecturer, National Institute of Technology Silchar, India.

## Awards & Fellowships

- 2012 Best paper award in GEOMATRIX 12 at IIT Bombay (February 26-29, 2012) for the paper titled: “Variogram Fractal Dimension Based Features for Hyperspectral Data Dimensionality reduction”.
- 2009 Indian Society for Remote Sensing (ISRS) Award for best paper published in JISRS (Photonirvachak) for “RS & GIS Analysis Techniques” category for the year 2008.
- 2009 ERASMUS MUNDUS EU research fellow at , Instituto Superior de Estatística e Gestão de Informação (ISEGI) Lisbon, Portugal.
- 2009 Won FIG Foundation Scholarship 2009 for research paper "GEOWARNS: A System to Warn Geo-deformation Failure".
- 2007 DAAD Scholarship for Research work at Germany.
- 1993-1996 All India Council for Technical Education (AICTE) fellowship for Doctoral study Program
- 1988-1990 AICTE fellowship for Post-graduate (M.Tech.) study,
- 1984 1st prizewinner in the National Design Competition among Civil Engineering Students held by National Research and Design Forum of Institution of Eng(I).
- 1977 National (India) Scholar.

## Reviewer of Journals

ASCE CCE, USA

IEEE GE, USA

International Journal of Remote sensing, UK

*Journal of Atmospheric and Solar-Terrestrial Physics* (2016) ATP4585

International Journal of Geoinformatics, Thailand.

Sadhana, Proceeding in Engineering Sciences of Indian Academy of Science.

Photonirvachak, Journal of the Indian Society of remote Sensing, India.

## Professional Training

- 2015 Bernese GNSS Software V5.2 Introduction Course, University of Bern, Switzerland.
- 2009 GAMIT/GLOBK Advanced Users Workshop at C-MMACS Bangalore India.
- 2000 Global Positioning System and its application. Indian Institute of Remote Sensing Dehradun, India.
- 1994 Device Drivers for Personal Computers, University of Roorkee, India.
- 1994 Application of Finite Element method in Engineering. IIT Kharagpur, India.
- 1992 Oil Pollution; Monitoring, Prevention and Control. University of Roorkee, India.
- 1986 Optimisation Techniques in Process Engineering. IISc Bangalore, India.

## Knowledge in Computer

Programming languages

MATLAB, C++, C, FORTRAN, BASIC;

Operating System

DOS, UNIX, XENIX, WINDOWS;

Software	Different GIS (Arc-Info etc.), GPS (GNSS, BERNESSE etc.), Image Processing (ERDAS, ENVI etc); SURFER etc.
General purpose Software	MS - Office, Excel, Power point; SPSS etc.

### **Research Projects completed**

2012-2014	Dimensionality Reduction of Hyper-spectral Remote Sensing Data by ISRO, DOS, 1.412 Million INR.
2008-2011	Development of an automated Warning System (SLIDEWARN) for monitoring of Mansa Hill (Haridwar) Landslide, 460,000 INR.
2007-2010	Estimation of PWV using GPS by DST, 1.012 Million INR.
1999-2002	Development of a decision support system for Landslide in a North-Eastern Region using Satellite and ancillary data in a GIS environment, by AICTE 0.5Million INR.

### **Subjects Taught**

#### **Under Graduate**

Geomatics-I	2015,2016
GPS & its applications	2010, 2011, 2012, 2013
Digital Image Processing	2011, 2012
Principles of Surveying	1985-88, 1990-1993, 2003, 2004, 2006, 2007, 2008, 2013
Engineering Graphics	1998 to 2005
Engineering Mechanics	1985-88
Numerical Methods and Computer Programming (FORTRAN and C) 1999	
Computer Systems and Programming (C++)	2002

#### **Post Graduate**

GPS Surveying	2003 to 2008
Introduction to Geodesy and GPS Surveying	2012 to 2016
Geodetic Surveying	1999 to 2004
Basic Remote Sensing	1998
Advances in Remote Sensing	2010, 2011
Hyperspectral Remote Sensing	2008, 2010, 2012
Remote Sensing for LU/ LC Analysis and Mapping	2003
Fuzzy Image Processing	2005
Expert System, Neural Network and Fuzzy Systems	2006 to 2010
Advanced Programming and Computer Graphics	2004

### **Short Term Courses Organized**

2007	Short term course on “GPS Surveying” February 05-09.
2006	Special training course on “Rural Infrastructure Development”, May 2-26, for NABARD, India.
2005	Short term course on “GPS Surveying” November 28 to December 02.
2004	Short term course on “GPS Surveying” July12-16.

- 2003-2004 Short term course on “GPS and its application ” December 29, - January 03.  
 2002 Short term course on “GPS Surveying” June 3-12.  
 2001 Training program on GPS during September 5-8.

### **Invited Lectures delivered**

- 2014 "A UAV based Autonomous System for surveillance and proclamation of warning during disaster' in the SSTDM (Small satellite and Technological Development for Disaster management) at IISc Bangalore (April 02), India.  
 2014 "GPS for GIS" in the STTP on “GIS applications in Engineering” at NIT Silchar. 2012  
 "Geomatics for Small Hydro-power Projects" AHEC IITR, June 18 India.  
 2007 "E-learning in the Perspective of Surveying” at University of Applied Sciences, Karlsruhe, June 14 Germany.  
 2006 "Approach of IITR in VLBI program in India” at BARC, Mumbai, November 03.  
 2006 "GPS Surveying" at Birla Institute of Technology, Mesra. (September 3-5).  
 2004 "GPS Data Collection Analysis" in QIP STC on RS and GIS applications with special emphasis to Infrastructure Planning (June 8).  
 2003 "GPS for forest Surveying" Forest Survey of India, Dehradun.

### **Publications**

#### **Books**

- 2016 A Text Book on GPS Surveying, CRC Press, US.  
 2010 ELEMENTARY ENGINEERING SURVEYING, Studium Press, New Delhi

#### **Online course**

- 2016 GPS Surveying (September 05-30, 2016) NPTEL Online Course.

#### **Web Course**

- 2006 SURVEYING under NPTEL program of MHRD, Govt.of India  
<http://nptel.ac.in/courses/Webcourse-contents/IITROORKEE/SURVEYING/home.htm>).

### **Monograph**

- 2012 1. “Development of a Landslide Hazard Assessment System” LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany, *published May 2012*.  
 2. “Development of a Geo-hazard Warning Communication System” LAP LAMBERT Academic Publishing GmbH & Co. KG, Germany, *published Aug 2012*.

### **Chapter of books**

- 2012 “Fuzzy Knowledge Based GIS for Zonation of Landslide Susceptibility” by **J.K. Ghosh**, D. Bhattacharya and S.K. Sharma Chapter 2 in “Applications of Chaos and Nonlinear Dynamics in Science and Engineering - Vol. 2, Understanding Complex Systems, DOI 10.1007/978-3-642-29329-0\_2, # Springer-Verlag Berlin Heidelberg 2012 Editors - S. Banerjee, M. Mitra, L. Rondoni, ( <http://www.springerlink.com/content/88x321100k07244h/>)
- 2001 “Fuzzy Logic: Basic Concepts” in Geographical Information Science“ published by Geoinformatics Division Indian Institute of Remote Sensing Dehradun.

### Peer-Reviewed Journal papers

- 2016 41. Naveen Chandra and **Jayanta Kumar Ghosh** (2016). A cognitive based method for building detection from high resolution satellite images. Current Science (Accepted).
40. Vinay Kumar and **Jayanta Kumar Ghosh** (2016). Objects Detection in Hyperspectral Images using Spectral Derivative, Journal of the Indian Society of Remote Sensing (Accepted).
39. Upendra Nath Mishra and **Jayanta Kumar Ghosh** (2016). Development of a Gravimetric Geoid Model and a Comparative study, Journal of Geodesy & Cartography 2016, 42(3): 75–84, (September).  
<http://www.tandfonline.com/doi/full/10.3846/20296991.2016.1226368>.
38. Vinay Kumar and **Jayanta Kumar Ghosh** (2016). Camouflage Detection using MWIR Hyperspectral Images, Journal of the Indian Society of Remote Sensing. (Accepted)
37. **Ghosh. J.K.** and U. Mishra (2016). Determination Of Geoid Undulation By Astro-Geodetic Method, ASCE Journal of Surveying Engineering, Volume 142, Issue 3 (August 2016).
- 2015 36. N.G. Ganpatrao and **J. K. Ghosh** (2015). Indian Topographical Map Symbols Understanding System, IET Computer Vision, The Institution of Engineering and Technology, Vol.9, Issue 2, pp. 300–308 (April).
35. **Ghosh. J.K.** and S. Pathak (2015). A study on variation in Position of an Indian Station due to Solid Earth Tides, Journal of Earth System Science, 124, No. 3, pp. 603–612 (April).
- 2014 34. Bhattacharya, Devanjan, **J. K. Ghosh**, J. Komarkova, S. Banerjee and H. Kutoglu. Distributed GIS for Automated Natural Hazard Zonation Mapping Internet SMS Warning towards Sustainable Society, Cogent Engineering, 1, 961346.
33. **Ghosh. J.K.**, D. Bhattacharya, P. Boccardo and N.K. Samadhiya. Automated Geo-Spatial Hazard Warning System GEOWARNS: An Italian Case Study, Journal of Computing in Civil Engineering, ASCE DOI:10.1061/(ASCE)CP.1943-5487.0000372.
32. D. Singh, D., **J.K. Ghosh**, D. Kashyap. Precipitable water vapor estimation in India from GPS-derived Zenith delays using radiosonde data, Meteorology and Atmospheric Physics, 123:209–220.

31. D. Singh, D., **J.K. Ghosh**, D. Kashyap. Weighted mean temperature model for extra tropical region of India. *Journal of Atmospheric and Solar- Terrestrial Physics* 107, 48–53.
  30. Mukherjee K, A. Bhattacharya, **J.K.Ghosh** and M.K.Arora. Comparative performance of fractal based and conventional methods for dimensionality reduction of hyperspectral data, *Optics and Lasers in Engineering*, Vol 55, pp 267-274 (April).
- 2013
29. Bhattacharya,D., **J.K. Ghosh**, P. Boccoardo and J. Komarkova. Automated Geo-Spatial System for Generalized Assessment of Socio-Economic Vulnerability due to Landslide in a Region, *European Journal of Remote Sensing*, Volume: 46 Pages: 379 - 399 DOI: 10.5721/EuJRS20134622 <http://www.aitjournal.com/articleView.aspx?ID=799>
  28. Sharma, N and **J. K. Ghosh**. Sevcik's Fractal Based Dimensionality Reduction of Hyper-Spectral Remote Sensing Data, *International Journal of Computer Science and Technology*, Vol.4, Issue 2, April-June, pp 52-55.
  27. Kriti Mukherjee, **Jayanta K Ghosh** and Ramesh C. Mittal (2013). Variogram Fractal Dimension Based Features for Hyperspectral Data Dimensionality Reduction, *Photonirvachak, Journal of Indian Soc Remote Sens*, Vol. 41 No.2 (June), 249-258. DOI 10.1007/s12524-012-0225-4.
  26. N.G. Ganpatrao and **J. K. Ghosh**. Information extraction from topographic map using colour and shape analysis, *Journal of the Indian Academy of Sciences, SADHANA*, October 2014, Volume 39, Issue 5, pp 1095-1117, [DOI 10.1007/s12046-014-0270-5](https://doi.org/10.1007/s12046-014-0270-5)
- 2012
25. Gitanjali G. Nikam and **J. K. Ghosh**. Soft Computation Based Topographic Map Legend Understanding Prototype System, *International Journal of Soft Computing and Engineering (IJSCE)* ISSN: 2231-2307, Volume-3, Issue-1, March 2013, pp. 116-120
  24. Varshney, A., M. K. Arora and **J.K. Ghosh**. Median change vector analysis algorithm for land use land cover change detection from remote sensing data, *International Journal of Remote Sensing Letters* Vol. 3, No. 7, 10 December 2012, 605–614.
  23. D. Bhattacharya, **J. K. Ghosh** and N. K. Samadhiya. A Review Of Geo-Hazard Warning Systems Towards Development Of A Popular Usage Geo-Hazard Warning Communication System, *ASCE Natural Hazards Review*, November.
  22. D. Singh, **J.K. Ghosh** and D. Kashyap. The temporal variation of mean gravity of atmosphere, *Advances in Space Research* 50, 7 (October) 963–972. (<http://dx.doi.org/10.1016/j.asr.2012.06.007>)
  21. **J. K. Ghosh**, D. Bhattacharya, P. Boccoardo and N. K. Samadhiya. A Generalized Geo- Hazard Warning System, *Natural Hazards*, Volume 64 Number 2(DOI)10.1007/s11069-012-0296-0. <http://www.springerlink.com/openurl.asp?>

20. D. Singh, **Ghosh, J.K.** and D. Kasyap. Development of a site specific ZHD model using Radiosonde data, Journal Acta Geodaetica et Geophysica Hungarica, Vol. 47 (1), pp Vol. 47, No.1 (March), pp. 90-100 DOI: 10.1556/AGeod.47.2012.1.8 (<http://dx.doi.org/10.1556/AGeod.47.2012.1.8>).
19. Mukherjee, K., **Ghosh, J.K.**, and Mittal, R.C. Dimensionality Reduction of Hyperspectral Data Using Spectral Fractal Energy Features”, Geocarto International Vol. 27, No. 6, October 2012, 515–53.
18. **Ghosh, J.K.**, D. Singh and A. Dubey. Comparative study of zenith hydrostatic models for PWV estimation over Bangalore, Journal of Geomatics Vol. 6 No. 1.
- 2011 17. Bhattacharya, D, **J. K. Ghosh**, P. Boccardo and N. K. Samadhiya. Wireless Hazard Communication System, Journal of Systems and Information Technology, Vol. 13, Issue 4, October 10, 2011. (<http://www.emeraldinsight.com/journals.htm?issn=1328-7265&volume=13&issue=4>).
- 2010 16. **Ghosh, J.K.** and D. Bhattacharya. A Knowledge Based Landslide Susceptibility Zonation System, ASCE Journal of Computing in Civil Engineering, Vol.24, No.4, pp.325-334. (<http://link.aip.org/link/?QCP/24/4/htmltoc>).
- 2009 16. **Ghosh, J.K.**, A. Singh and K. Mukherjee. Detection of Anomaly in Water Body using Hyperspectral Images, Journal of Geomatics Vol. 3 No. 2 pp 53-56 (October).
15. **Ghosh, J.K.** and A. Dubey. Impact of India's New Map Policy on Accuracy of GIS theme, Photonirvachak, Journal of Indian Society of Remote Sensing, Vol. 37, No. 1 pp 1-7 (June).
- 2008 14. **Ghosh, J.K.**, R. Goel and K. Mukherjee (2008). Measures Based on Fuzzy Correlation Coefficient for Accuracy assessment of Fuzzy Classification, International Journal of Geoinformatics, Vol.4, No.4, 09-16 (December).
13. Devanjan Bhattacharya and **Jayanta Kumar Ghosh**. An Evaluation of Knowledge Representation Schemes as a Pre-requisite towards development of a Knowledge Based System. ASCE Journal of Computing in American Society of Civil Engineers, Vol.22, No.6 pp 348-359 ( November/December).
12. **J.K. Ghosh** and Singh, A. Fractal Compression Of Satellite Images, Photonirvachak, Journal of the Indian Society of Remote Sensing, Vol. 36, No. 4 pp 299-311 (December) (**Won ISRS best paper award 2008**).
11. **J.K. Ghosh** and A. Singh. Fractal Based Dimensionality Reduction of Hyper- spectral Images, Photonirvachak, Journal of Indian Society of Remote

**10. Ghosh, J.K.** and A. Dubey. Sensitivity Analysis of GPS Estimated PWV. Journal of Geomatics Vol.2, No.1 pp 37-42, (April)

9. **J.K. Ghosh**, A. Singh, and R.C.Mittal. Fractal Feature for Classification of Hyper- spectral Images of Moffit Field, USA, Current Science, Vol. 94, No. 3, pp 356-358 (February).

8. **Ghosh, J.K** and A. Dubey. India" s New Map Policy – Utility of Civil User, Journal of Current Science, Vol. 94, No. 3, pp 332-337 (February).

2006 7. **Ghosh, J.K**, O. Sharma and A. Goyal.GPS Based Control Points for Mapping, Coordinate, A Journal on Navigation, October 2006, pp 24-27.

2005 6. **Ghosh, J. K.**, K. Kishore, M. Juhuri and D. Sodani. Measurement of deflection of a bridge, **Coordinate**, A Journal on Navigation, August 2005, pp 23-24.

2004 5. **Ghosh, J.K.** Automated Interpretation of Sub-pixel Vegetation from IRS LISS-II Images, International Journal of Remote Sensing, Volume 25, No. 6, 1207-1222 (June).

2002 4. **Ghosh, J.K.**, Godbole, P.N., and Ghosh, S.K. Automated Interpretation of Sub-pixel Water Cover from Satellite Images, Photonirvachak, the Journal of the Indian Society for Remote Sensing, Vol. 30, No.1 & 2 pp 53-59.

3. **Ghosh, J.K.** Global Positioning System and its Application. Indian Journal of Continuing Engineering Education, January 2002 (pp 42-48).

2001 2. **Ghosh, J.K.** Automated Mapping of Vegetation from Satellite data, Geoinformation Science Journal, Vol.1, No. 2, 61-65 (April).

1984 1. **Ghosh, J.K.** Land Treatment as a Waste Water Management Alternative, Journal of the Institution of Engineers (India), Students' Journal, Vol. 64, Pt.S 3, pp 84-85.

### **Fully Peer-Reviewed Conference Papers**

2014 49. Sharma Ashu, Ghosh J.K., "Saliency Based Segmentation of Satellite Images", Photometric Image Analysis + High Resolution Earth Imaging for Geospatial Information, Munich, Germany (Communicated).

2013 48. Mishra, U and **J. K. Ghosh** (2013). A Study of Determination of GEOID Undulation by Astrogeodetic Method, ION GNSS+ 2013, September 16-20, 2013, Nashville, Tennessee USA.

2012 47. Gitanjali G. Nikam and J. K. Ghosh (2012). Indian Topographic Map Symbols



Understanding System, Proceedings of the 2013 IEEE Second International Conference on Image Information Processing (ICIIP-2013), pp. 33-38.

46. Mukherjee K, **J.K. Ghosh** and R.C. Mittal. Variogram fractal dimension based features for hyperspectral data Dimensionality reduction, GEOMATRIX-12, An international conference on Geospatial Technologies & Applications, February 26-29, Mumbai [**Best paper award**].

45. Mathew, A.P and **J. K. Ghosh**. A comparative study of nonlinear dimensionality reduction algorithms for hyperspectral data, GEOMATRIX-12, An international conference on Geospatial Technologies & Applications, February 26-29, Mumbai.

44. Nikam G. G. and **J. K. Ghosh**. A Topographic Map Legend Understanding Prototype System, GEOMATRIX-12, An international conference on Geospatial Technologies & Applications, February 26-29, Mumbai.

43. Singh. D, **J.K.Ghosh** and D.Kashyap. Regional mean temperature model for estimation of precipitable water vapor, GEOMATRIX-12, An international conference on Geospatial Technologies & Applications, February 26-29, Mumbai.

2011      42. **Ghosh, J. K.** ALWES (Automated Landslide Early Warning System ) – A Prototype System under Development, ION GNSS 2011, Portland USA (September 20-23).

2010      41. **J. K. Ghosh**, D. Bhattacharya, P. Boccoardo and N. K. Samadhiya. A Landslide Hazard Warning System, International Archives of the Photogrammetry, Remote Sensing and Spatial Information Science, Volume XXXVIII, Part 8, pp 261-265.  
([isprs.org/proceedings/XXXVIII/part8/headline/TS23/W01OE3\\_20100304002241.pdf](http://isprs.org/proceedings/XXXVIII/part8/headline/TS23/W01OE3_20100304002241.pdf).)

40. **Jayanta Kumar Ghosh**, Devanjan Bhattacharya, Ankur Mundra, Yuvraj Singh, Vinayak Shrestha and Ram Bhuwan Chauhan , India. Geo-deformation Analysis Using GPS, XXIV FIG International Congress 2010 on “Facing the Challenges – Building the Capacity” Sydney, Australia, 11-16 April.

39. Bhattacharya, D, **J. K. Ghosh**, P. Boccoardo and N. K. Samadhiya (2010). A Popular Usage based Hazard Warning System, International Conference Gi4DM 2010, Turin Italy (February 2-4)

2009      38. **Ghosh, J.K.** and K. Mukherjee. “Fractal Based Dimensionality Reduction of Hyper- spectral Images using power spectrum Method” Advances in Computational Vision and Medical Image Processing : Methods and Applications, Edited by João Manuel R.S. Tavares, R.M. Natal Jorge, Springer Publication, pp 89-94. (ISBN: 978-0-415-57041-1)

37. **Ghosh, J.K.** and K. Mukherjee. “Dimensionality Reduction Of Hyper-spectral Data: A Fractal Based Approach“, WHISPERS 2009, IEEE workshop on Hyper-spectral Image and Signal Processing - Evolution in Remote Sensing, Grenoble, France 26-28, August.

36. **Ghosh, J. K.**, Bhattacharya, D. and Samadhiya, N. K. (2009), "GEOWARNS: A System to Warn Geo-deformation Failure", *Procs . FIG Working Week 2009 Surveyors Key Role in Accelerated Development, Eilat, Israel*, Vol. 1 No. 1, pp. 1-12 [FIG Award Winner]  
([http://www.fig.net/pub/fig2009/papers/ts04b/ts04b\\_ghosh\\_bhattacharya\\_samadhiya\\_3435.pdf](http://www.fig.net/pub/fig2009/papers/ts04b/ts04b_ghosh_bhattacharya_samadhiya_3435.pdf).)
- 2008 35. **Ghosh, J.K.** and Bhattacharya, D. Landslide Hazard Automated Zonation (LHAZ) System. 12<sup>th</sup> International Conference of International Association for Computer Methods and Advances in Geomechanics (IACMAG), October 1-6, 2008, Goa, India (Double Peer Reviewed).
- 2006 34. Dubey. A and **J.K. Ghosh**, (2006). "India's New Map Policy - Utility of `Civil User" ISPRS TC-IV International Symposium on "Geospatial Data bases for sustainable Development" Goa Abstracts pp6.
- 2005 33. Singh. A, **J.K. Ghosh** and R.C.Mittal. Fractal Compression Of IRS LISS-II Images, 25<sup>th</sup> ISRS Annual Convention and National Symposium, "Emergence of Geoinformatics for Development : Trends & Opportnities", December 6-9,Ranchi India., Compendium of abstract pp 214.
- 2005 32. **Ghosh, J.K.** and Sahil Suri. A Knowledge Based System for Assessment of Landslide Hazard, Proceedings of Indian Geotechnical Conference: IGC-2005, December 17-19, Ahmedabad, pp. 393-396.
- 2004 31. Lakkad, J and **J.K.Ghosh**. Fractal feature of land use class of satellite images. Proceedings of 46<sup>th</sup> International Symposium Elmar 2004. June 16-18, Zadar, Croatia pp 561-566.
- 2000 30. **Ghosh, J.K.**, Godbole, P.N., and Ghosh, S.K. Mapping of Tea Gardens from satellite Images- A Fuzzy Knowledge-Based Image Interpretation System. International Archives for Photogrammetry & Remote Sensing (Part-B).
- 1996 29. **Ghosh, J.K.** Computer Understanding of Sub-pixel Land Cover, in International Archives of Photogrammetry & Remote Sensing. Vol. XXX.
- 1992 28. **Ghosh, J.K.**, Lamar, H., and Roel, N. Forest Cover and Land Use Mapping of a region of Barak Valley of Assam, India using IRS LISS II imagery, in International Archives of Photogrammetry & Remote sensing. Vol. XXIX.
- 1991 27. **Ghosh, J.K.** and Rampal, K.K. Mapping of Mineralized Zone in Jharia/Raniganj Coal Fields using Remote Sensing Imagery at Congress VIII of International Society of Mine Surveying held at Lexington Kentucky, USA.

### Other Conference Papers

- 2014 26. Sharma Ashu, Chandra Naveen, Ghosh J.K., "Salient Region Extraction of Satellite

- 2011
25. Gitanjali G. Nikam and J. K. Ghosh (2011). A Map Legend Understanding System, Proceedings of the International Conference on Soft Computing for Problem Solving (SocProS 2011), IIT Roorkee, India, December 20-22, 2011, Vol. 131, No. 2, pp. 41-47. Advances in Intelligent and Soft Computing Volume 131, 2012, pp 53-62, springerlink.com. DOI- 10.1007/978-81-322-0491-65
24. Dinesh Singh and **Jayanta Kumar Ghosh**. Effect of Precipitable water Vapor in Microwave Propagation, 7th international Conference on Microwaves, Antenna, Propagation and Remote Sensing (ICMARS – 2011), International Center for Radio Science (ICRS), Jodhpur, India, December 2011, Paper -147 (S7-04).
- 2010
23. 'Varshney, A., Arora, M. K. and **Ghosh, J.K.** " A Modified Change Vector Analysis Algorithm for Land Use Land Cover Change Detection from Remote Sensing Data" Conference Proceedings on remote sensing and GIS for environmental management (RSGIS-EM2010), 10 Aug., , Jamia Millia Islamia Delhi, India, pp.215-226.
- 2009
22. **Ghosh, J.K.** and D. Bhattacharya. "Landslide hazard warning system (LANDWARNS)", India Disaster Management Congress, New Delhi, November 4-6.
21. **J.K. Ghosh** and Bhattacharya. D . A Knowledge Based System for Assessment of Impact of Landslide on Population of a region in Uttarakhand" at National Conference on " Geomatics and impact of climate change with specific reference to Mountain Eco-system" February 5, Dehradun.
- 2008
20. Verma, S., **J.K.Ghosh** and R. Yadav. Development of Deformation Monitoring System based on GNSS sensor, Proceedings of symposium of Location India 2008, February 7-8, Noida.
19. **Ghosh, J.K.** An Automated System for Zonation of Landslide in Tehri-Garhwal District, Uttarakhand (India), Proceedings of Conference on LANDSLIDE MANAGEMENT, present scenario and future directions, Roorkee, February 10-12.
18. Verma, S., **J.K.Ghosh** and R. Yadav. Development of a Prototype for Monitoring of Deformation, Proceedings of Conference on Challenges and Applications of Mathematical Modelling Techniques in Building Science and Technology (CAM2tBST), Roorkee, February 7-8.
17. **Ghosh, J.K.**, Johri, M., Kishore, K., and Sodani, D. "Bridge Deflection Measurement Using Space Technology", Proc. of the International Conference on Civil Engineering in the New Millennium: Opportunities and Challenges (CENeM-2007), 150-year anniversary conference at Bengal Engineering and Science University, Shibpur, India, Vol. II, pp. 1137-1141.
16. Bhattacharya, D., and **Ghosh, J.K.**, (2008), "Landslide Understanding System",

Proc. of the International Conference on Civil Engineering in the New Millennium: Opportunities and Challenges" (CENeM-2007), 150- year anniversary conference at Bengal Engineering and Science University, Shibpur, India, Vol. III, pp. 1669-1672.

- 2007      15. **Ghosh, J.K.** and A. Singh. Land-Cover Anomaly Detection Using Hyperspectral Images. Proceedings of the National Conference on High Resolution Remote Sensing & Thematic Application, December 18-20, 2007 Kolkata Pp 101.
- 2006      14. **Ghosh, J.K.**, S. Kumar and A. Dubey (2006). Precursor Of Earthquake Based On Geodetic Computation, 13<sup>th</sup> Symposium on Earthquake Engineering (13 SEE), December 18-20, Roorkee.
13. **Ghosh, J.K.**, S. Vaibhav, K.Kishore, M. Juhuri and D. Sodani. Measurement of Deflection of Bridges Using GPS. Proceedings of National Symposium on Bridge Engineering March 24-25, Roorkee pp 605-611.
12. Singh. A, **J.K. Ghosh** and R.C.Mittal. Compression Ratio as Complexity Measure of Remote Sensing Images, Geomatics -2006, "Geomatics for Infrastructural Development", January 4-6, Chennai India.
11. Vaibhav, S and **J.K. Ghosh**. Geomatics Based Measurement of Bridge Deflection. Geomatics -2006, "Geomatics for Infrastructural Development", January 4-6, Chennai India pp.
- 2005      10. **Ghosh, J.K.** and K. Mukherjee. A Comparative Study Of Accuracy Assessment Methods For Fuzzy Classification Of Satellite Images, Proceedings of Map India 2005, 7 – 9 February, New Delhi.
- 2004      9. Mukherjee, K and **J.K. Ghosh**. GPS Based Fault Locator in Power Grid, Abstract 24<sup>th</sup> ISRS Annual Convention and National Symposium, "Converging Space Technologies for National development", November 3-5, Jaipur India pp 227-229.
8. Lakkad, J and **J.K.Ghosh**. Fractal feature for land use class of satellite images, Abstract 24<sup>th</sup> ISRS Annual Convention and National Symposium, "Converging Space Technologies for National development", November 3-5, Jaipur India pp 119.
7. Bhattacharyaa. A and **J.K. Ghosh**. GPS Based Determination of Wind Force, Abstract 24<sup>th</sup> ISRS Annual Convention and National Symposium, "Converging Space Technologies for National development", November 3-5, Jaipur India pp 235-237.
6. Ghosh, S and **J.K. Ghosh**. GPS Based Estimation of Real Time Agricultural Water Demand , Abstract 24<sup>th</sup> ISRS Annual Convention and National Symposium, "Converging Space Technologies for National development", November 3-5, Jaipur India pp 6-8. **(Won Award in ISRS 2004)**

- 2001 5. **Ghosh, J.K.**, Godbole, P.N., and Ghosh, S.K. Automated Mapping of Tea Gardens from satellite Images, All India Seminar on Infrastructural Development in Uttaranchal- Problems & Prospects (IN-D-U-2001), Roorkee October.
4. **Ghosh, J.K.** and Ch. V.A. Rao, GPS Control Point Positioning. Asian GPS Conference held at New Delhi (October 29-30).
- 1999 3. **Ghosh, J.K.** Interpretation System for Sub-pixel Vegetation Cover, in Geoinformatics: Beyond 2000 an International Conference on Geoinformatics for Natural Resources Assessment, Monitoring and management held at Dehradun, India during March 9-11.
- 1997 2. **Ghosh, J.K.** Sub-pixel Water Cover Interpretation System, National Conference on Remote Sensing for Natural Resources with special emphasis on infrastructure development held at Hyderabad, November 26-28.
- 1995 1. **Ghosh, J.K.**, Godbole, P.N., and Ghosh, S.K. VEXIN Vegetation EXpert Interpretation System Proceeding of International Workshop on International Mapping from Space held at Madras, India.

## **Students' Supervisor**

### **Awarded Doctoral Theses**

- 2016 5. Soft Computation Based Indian Topographic Map Understanding System (ITMUS).
- 2013 4. Site-Specific Estimation of Precipitable Water Vapor using GPS data
- 2012 3. Remote Sensing Based Forest Cover mapping Using Recent Techniques
- 2012 2. Fractal Analysis for Dimensionality Reduction of Hyper spectral Data.
- 2011 1. Development of a Geo-Hazard Warning Communication System.

### **Awarded Master's Theses**

- 2016 32. Air Quality Analysis using remote sensing data.  
31. Structural Health Monitoring using GPS data.
- 2015 30. Water Quality Mapping and Analysis in a Stretch of Upper Ganga Canal.  
29. Development of GPS Based System for Monitoring of Speed Vehicle.  
28. A Comparative Study of Dimensionality Reduction of Indian Hyperspectral Data.  
27. GPS Based Health Monitoring of a Cable Stayed Foot Bridge.
- 2014 26. Regional Study of Earth Tides.  
25. An accuracy assessment of GPS data.  
24. A study of impact of rainfall on land-slope stability using Geomatics technique.
- 2013 23. Development of a software for Dimensionality Reduction of Hyperspectral RS Data.  
22. A comparative study of Ambiguity Resolution of GPS Observations.
- 2012 21. GPS network adjustment using Kalman Filter

- 20. ANN based modeling for prediction of rainfall from GPS and meteorological data.
- 19. Prediction of Ionospheric error in GPS data.
- 2011      18. Study of Few Dimensionality Reduction Algorithms for Hyperspectral RS Data.
- 17. Soft computation of satellite data for land cover information.
- 2010      16. Determination of Pavement Deterioration Model Using ANN.
- 15. Meshless method for Infinite Beams on Elastic Foundation.
- 14. Analysis of FRP Web Core Bridge Deck Structure.
- 13. Approaches for Quality Assessment for Change Detection.
- 12. ANN analysis of Geo-data.
- 2009      11. Static and Dynamic Analysis of Mansa Devi Hill Landslide using Flac 3D and DEM.
- 2008      10. Development of a GPS based Deformation Monitoring System.
- 9. Simulation studies of Kalman Filtering on state vectors of GPS receiver.
- 8. Analysis of structural deformation based on GPS data.
- 2007      7. Water Vapor Estimation Using GPS.
- 6. Development of a Landslide Hazard Assessment System.
- 5. Accuracy Assessment of Sub-pixel Classification.
- 2006      4. Fractal Based Image Analysis.
- 2005      3. Some Accuracy Assessment Methods for Fuzzy Classification of RS Data-A Comparative Study.
- 2000      2. Development of a software for Land Cover Classification from satellite data using ANN.
- 1. Expert System for Drainage Pattern.

### **Ongoing Doctoral Theses**

- 1. Camouflaged Target Detection.
- 2. A study on Different Methods for Development of Indian Geoid Model.
- 3. Target Detection Using Hyperspectral Images in thermal Infra-red Band.
- 4. Cognitive Interpretation of Satellite Images.
- 5. GPS based prototype development.
- 6. Psycho-visual Interpretation of Satellite Images.
- 7. Mixed-pixel Analysis of Hyperspectral data.
- 8. Intelligent route alignment system.

### **Ongoing Master's Theses**

- 1. Hydrocarbon Prospecting of South NE Region (of india) using Remote Sensing technology.

## Undergraduate Project Supervised

- 2016-17      Engineering Survey for storm water drainage system for IITR.  
2014-15      Engineering Survey for planning and design of a multi-storied residential complex.  
2010-11      1. Estimation Of PWV at IIT Roorkee using Geomatics and Conventional techniques – a Comparative study.  
                 2. Engineering Survey of Geotechnical and Geo-informatic analysis of a slope stability.  
2008-09 :    Geo-deformation Analysis Through Geodetic and Geotechnical Investigation  
2006-07 :    Geospatial Impact of a landslide using GIS.  
2004-05 :    Engineering Survey of Transportation Infra-structure Improvement in Roorkee City.  
2001-02 :    Engineering Survey for preparation of a proposal for construction of a dam on Jamrani river.  
1998-99 :    Engineering Survey for preparation of a proposal for construction of a sewage treatment plant for disposal of sewage from UOR Roorkee.

## Foreign Visits

- 2011          **USA** International Conference ION GNSS 2011, Portland Oregon & presented a paper ALWES (Automated Landslide Early Warning System ) – A Prototype System under Development.  
2010          **JAPAN**, International Conference of ISPRS Technical Commission VIII Symposium at Kyoto, Japan.  
2009          **PORTUGAL**, Instituto Superior de Estatística e Gestão de Informação (ISEGI), Universidade Nova de Lisboa, Portugal (ERASMUS MUNDUS EU fellow).  
2009          **ISRAEL**, International Conference “Surveyors Key Role in Accelerated Development “FIG Working Week 2009 in Eilat, Israel.  
2008          **ITALY**, Politecnico de Torino. Bi-lateral cooperation leading to exchange of Young Indian scholar for joint research project.  
2007          **GERMANY**, University of Applied Sciences, Karlsruhe for Post- doctoral research work under DAAD.

## Administrative Posts hold

- 2014-2016    Secretary, Deptt. Administrative Com. , Civil engineering Department, IIT Roorkee.  
2014-2016    Member, Departmental TT Committee.  
2014-2016    O.C. M.Tech, Geomatics Engineering Group, Civil engineering Department, IIT Roorkee.  
2010-2012    O.C. M.Tech, Geomatics Engineering Group, Civil engineering Department, IIT Roorkee.  
2006/2010    Co-ordinator, Geomatics Engineering section, Civil engineering Department, IIT Roorkee.  
2006-2008    O.C. Lab Geomatics Engineering section, Civil engineering Department, IIT Roorkee.

## Membership Of Professional Bodies

Indian Society of Remote Sensing (ISRS) (Life Member) L-638  
Indian Society of Geomatics (ISG) (Life Member) L-340

Indian National Cartographic Association (INCA) (Life Member) LM-938  
Institution of Engineers (Ind) [IE] (Life Member) LM-111548  
Indian Society for Technical Education (ISTE) (Life Member) LM-11258  
Indian Society for Continuing Engineering Education (Life Member)

### **Professional Referees**

Available upon request.