

## CURRICULUM VITAE

### Name:

DHYAN SINGH ARYA

### Education:

**Ph.D.** (Environmental Engineering), Pondicherry University, Pondicherry, India, 1997

**M. Tech.** (Hydrology) Indian Institute of Technology, Roorkee, India, 1991

### Area of expertise/ interest:

- GIS and Remote Sensing Applications
- Climate Change Impact Studies
- Hydrological Data Analysis
- Flood Studies (Flood Plain Mapping and Zoning, Urban Floods)

### Work experience:

#### Indian Institute of Technology, Roorkee, India

- Associate Professor {Sep 2009 onwards}, Assistant Professor {Feb 2001 - Sep 2009}, Lecturer {Jan 1998 - Feb 2001}
  - Teaching courses on Remote Sensing & GIS Applications in Hydrology, Urban Hydrology, Computer Applications & Programming and Hydroinformatics to undergraduate and postgraduate students
- Guest Faculty, *UNESCO-IHE, Delft, The Netherlands* from 17/6/05 to 14/11/2005 and from 7/12/2004 to 7/1/2005

#### Punjab Remote Sensing Centre, Ludhiana, India

- Scientist 'SC' {Dec 1995 to Jan 1998}
  - Worked on various environment related remote sensing and GIS projects.
  - Deputed to work on GIS-based decision support systems in Austria
- Guest Scientist (from Oct 1996-Dec 1997), *Environmental Software & Services GmbH, Austria*
  - Developed urban environmental information system, URBANWARE, using C++ and ACAToolkit
  - Prepared multi-media presentations on urban environmental problems in India for a web-based information system GAIA

#### Pondicherry University, Pondicherry, India

- Research Scientist {Oct 1991-Sept 1995}
  - Worked on computer-aided environmental impact assessment.
  - Developed software for EIA and time series analysis

### Publications:

Books	:	3	(Edited - 1)
Research papers	:	52	(Published -46, Communicated - 6)
PhD theses supervised	:	8	(Completed -6, Ongoing -2)
Master theses supervised	:	33	(Completed -30, Ongoing -3)
Projects undertaken	:	41	(Completed -30, Ongoing - 11)
Other reports	:	7	
Short-term courses organized	:	26	

### Computer applications:

GIS/Remote sensing	:	ArcGIS, ArcIMS, ArcEngine, ArcObjects, MapObject, ERDAS Imagine Google Map API
Application software	:	SWMM, HEC HMS, HEC RAS, MIKE-11, LARS-WG, Precis RCM
Programming	:	C++, VB and VBA, FORTRAN, HTML with ASPs
RDBMS used	:	MS Access, MS SQL Server
Software developed	:	17 (Completed -16, Ongoing - 1)

### Books:

1. Perumal, M, D.C. Singhal, D.S. **Arya**, D.K. Srivastava, N.K. Goel, B.S. Mathur, H. Joshi, Ranvir Singh, M.D. Nautiyal, 2005, Hydrological Perspectives for Sustainable Development (ed.), Vol 1 & 2, Allied Publishers Pvt Ltd., New Delhi, 1099 pages.
2. Abbasi, S.A. and D.S. **Arya**: 2000, Environmental Impact Assessment: Available Techniques, Emerging Trends, Discovery Publishing House, New Delhi, 161 pages.
3. **Arya**, D.S. and S.A. Abbasi: 1995, Urbanization and its Environmental Impacts, Discovery Publishing House, New Delhi, 193 pages.

### Research Papers:

1. Saba, D. and **Arya**, D.S. 2012, Sinuosity analysis of meanders and river shifting study of the Ganga River in Uttarakhand plains using GIS and remote sensing, Applied Geomatics (*Communicated*).
2. **Arya**, D.S., Kumar, D., Murumkar, A. and Rahman, M., 2012, Impact of Climate Change on Rainfall in North western Part of Bangladesh by Multi-model Ensemble using LARS-WG, International Journal of Climatology (*communicated*).
3. Sathish Kumar, D., D.S. **Arya** and Perumal, M.: 2011, Distributed Dual Drainage Model for Simulating Urban Storm Water Runoff in Open Drainage, Journal of Hydrology, (*communicated*).
4. Misir, V., D. S. **Arya**, A. R. Murumkar: 2011, Impact of ENSO on river flows in British Guyana, International Journal of Climatology (*communicated*).
5. Sathish Kumar, D., D.S. **Arya** and Z. Vojinovic: 2010, Modelling of Urban Landuse Dynamics and its Impact on Surface Runoff Characteristics, Computers, Environment and Urban Systems Journal (*communicated*).
6. Kabuya, P, M.M Rahman, D.S. **Arya** and N.K. Goel: 2010, Development of Isopluvial Maps using Frequency Analysis for North West Bangladesh, Water Resources Management Journal, (*communicated*).
7. Saba, D., Murumkar, A and **Arya**, D.S: 2013 Meandering Behaviour and Flood Hazard Mapping of the Ganges River Using Remote Sensing and GIS, to be presented in the International Conference on Challenges in Disaster Mitigation & Management, Feb 15-17, 2013, Roorkee, India.
8. Kaur, Sanimer, D. K. Srivastava, D. S. **Arya**: 2013, Improved planning model for canal scheduling of rotational irrigation, Journal of Irrigation and Drainage Engineering doi: 10.1061/(ASCE)IR.1943-4774.0000575.
9. Aggarwal, S.P, Garg, R.D., **Arya**, D.S. and Aeron, A.: 2012, Flood Damage Assessment of delta region of Mahanadi River in Odisha using RADARSAT data with ILWIS and ArcGIS Tools, Published in National Symposium on Space Technology for Food & Environmental Safety, December 5-7, 2012, New Delhi.
10. Rahman, M, N.K. Goel and D.S. **Arya**: 2012, Study of Early Flood Warning Dissemination System in Bangladesh, Journal of Flood Risk Management, DOI: 10.1111/jfr3.12012.
11. Goel, N.K., Karki, B., Kar, A.K. and **Arya**, D.S.: 2012, Development of regional flood frequency relationships for Nepal using SRTM data enabled attributes and clustering, International Presented in International Conference on Hydroinformatics, 2012, Hamburg (Germany).
12. **Arya**, D.S., Kabuya, P, murumkar, A.R., M.M Rahman, and N.K. Goel: 2012, Impact of Climate Change on Rainfall Pattern in Jamuneshwari River Basin, Bangladesh, Presented in International Conference on Hydroinformatics, 2012, Hamburg (Germany).
13. Aeron, A., Garg, R.D., **Arya**, D.S. and Aggarwal, S.P.: 2012, Advancement in Flood Risk Mapping Systems: A brief Review, i-manager's Journal of Civil Engineering, pp40-49.
14. Rahman, M, N.K. Goel and D.S. **Arya** : 2011, Development of Jamuneswari Flood Forecasting System – A Case Study in Bangladesh, ASCE Journal of Hydrologic Engineering, Vol 17, pp 1123-1140.
15. Gundekar, H. G., D. S. **Arya** and N. K. Goel: 2011, Morphometric study of the Dudhana river basin (Maharashtra), Hydrology Journal, Indian Association of Hydrologists, India, Vol 34, No 1-2, pp 33-41.

16. Rahman, M.M, D.S. **Arya**, N.K. Goel, and A.K. Mitra: 2011, Rainfall Statistics Evaluation of ECMWF and TRMM model Data over Bangladesh for Flood Related Studies, Meteorological Applications, DOI: 10.1002/met.293.
17. Kaur, Sanimer, D. K. Srivastava, D. S. **Arya**: 2011, Some Limitations of a Planning Model for Canal Scheduling of Rotational Irrigation, International Journal of Earth Sciences and Engineering, Vol 4(6 SPL), pp 286-289.
18. Rahman, M, D.S. **Arya**, N.K. Goel and Dhamy, A.P.: 2011, Design Flow and Stage Computations in the Teesta River, Bangladesh using Frequency Analysis and MIKE 11 Modeling, ASCE Journal of Hydrologic Engineering, Vol. 16, No. 2, pp. 176-186.
19. Rahman, M, D.S. **Arya** and N.K. Goel: 2010, Limitation of 90 m SRTM DEM in drainage network delineation using D8 method—a case study in flat terrain of Bangladesh, International Journal of Applied Geomatics, Vol 2, pp 49-58 (DOI 10.1007/s12518-010-0020-2).
20. **Arya**, D.S. and Joginder Singh: 2009, Web-based Resettlement and Rehabilitation Information System for Water Resources Projects - A case study, Hydrology Journal, Indian Association of Hydrologists, India, Vol 32, No 3-4, pp241-255.
21. Rahman, M, N.K. Goel and D.S. **Arya**: 2009, Advancement of Flood Forecasting and Warning System in Bangladesh for Risk Management - Present And Future, Published in the proceedings of the 3rd International conference on Perspective on Current and Future State on Water Resources & Environment, Jan 5-7, 2010, EWRI, ASCE, Chennai.
22. Rahman, M, D.S. **Arya** and N.K. Goel: 2009, Approach of Early Flood Warning Systems for Urban Flood Risk Mitigation, presented in conference on Research Activities in Disaster Mitigation for Housing in India, August 22-23, 2009, Roorkee, India, pp. 106-118 (Vol1).
23. Sathish Kumar, D. , Adam, E. E., Arya, D.S. and Goel, N.K: 2009, Urban Flood Risk Assessment and Mitigation, presented in conference on Research Activities in Disaster Mitigation for Housing in India, August 22-23, 2009, Roorkee, India, pp. 210-216 (Vol1).
24. Chakraborty, D. 1, Goel, N.K., Arya, D.S., Gairola, A.:2009,Flood Estimation in Mumbai Metropolitan Region Using Regional Flood Frequency Analysis, presented in conference on Research Activities in Disaster Mitigation for Housing in India, August 22-23, 2009, Roorkee, India, pp.135-147(Vol 1).
25. Agarwal, N., Arora, M., Goel, N.K., and Arya, D.S.: 2009, Estimation of snow cover area in Bhagirathi catchment upto Tehri dam site, Proceedings of national seminar on ' Hydro power stations- advancement in harnessing & up-keeping' , organized by National Power Training Institute, Durgapur, July 2-3, 2009 at Dehradun.
26. Gundekar, H. G., Arya, D. S., Goel, N. K., Sarkar, S. and Sethi, B. K. (2009). Aspects of Socio-Economic Implications of Floods in Last Decades. International Conference on Water, Environment, Energy and Society (WEES-2009) Organised by National Institute of Hydrology, Roorkee, Allied Publishers Pvt. Ltd., New Delhi, India, Vol-III, pp. 1496-1503
27. Babbar, R, Arya, D.S. and Joshi, H. (2009), A proposed Decision Support System for River Water Quality Management in India, Journal of Decision Systems, Vol 18(4), pages 411 – 427.
28. Rahman, M, D.S. **Arya** and N.K. Goel: 2008, Approach of Early Flood Warning System for Urban Flood Risk Mitigation, Presented in International Conference on Disasters and Development Bridging the gap between theory and practice (ICoDAD), November 23-24, 2008 Kathmandu, Nepal.
29. Chaturvedi, S. , D.S. **Arya** , D Sathishkumar and A. Basistha: 2008, Modelling the Spatial Distribution of Rainfall in Uttarakhand, India, 3<sup>rd</sup> Science and Technology Congress, Uttarakhand held at IIT Roorkee during 10-11 November, 2008.
30. Chaudhury, P.C., D.S. **Arya**, and D. K. Srivastava: 2008, Irrigation Management and Canal Scheduling using DSS in Harabhangi Irrigation Project (Orissa), published in the proceeding of 13th National Symposium on Hydrology with Focal Theme on 'Inflow Forecasting During Extremes' during August 28-29, 2008, held at I.I.T. Delhi, organized by National Institute of Hydrology.
31. E. E. Adam, D.S. Arya and D. Sathish Kumar: 2008, Storm Water Modelling in Roorkee City using SWMM – A Case Study, published in the proceeding of 13th National Symposium on Hydrology with Focal Theme on 'Inflow Forecasting During Extremes' during August 28-29, 2008, held at I.I.T. Delhi, organized by National Institute of Hydrology.

32. Rahman, M and D.S. **Arya**: 2008, Irrigation Performance Improvement by Non-Structural Measures – A Case Study from Bangladesh, ASCE conference on World Environmental & Water Resources Congress 2008, May 12-16, 2008, Honolulu, Hawaii (doi 10.1061/40976(316)555).
33. Basistha, A., D.S. **Arya**, and N.K. Goel: 2008, Analysis of Historical Changes in Rainfall in the Indian Himalayas, *International Journal of Climatology*, Vol 29 (4), pages 555-572.
34. Basistha, A., D.S. **Arya**, and N.K. Goel: 2007, Spatial Distribution of Rainfall in Indian Himalayas – a case study of Uttaranchal Province, India, *Journal of Water Resources Management*, vol 22: 1325-1346.
35. Basistha, A., N.K. Goel, D.S. **Arya** and S.K. Gangwar: 2007, Spatial Pattern of Trends in Indian Sub-divisional Rainfall, *Jalvigyan Samiksha (Hydrology Review)*, Indian National Committee on Hydrology, NIH, Roorkee, Vol 22, 2007:pp 47-57.
36. **Arya**, D.S., Gauchan, B and N.K. Goel: 2006, Flood Plain Mapping for East Rapti River, Nepal using GIS and HEC-RAS, International Conference on Hydroinformatics, 2006, Nice (France).
37. Goel, N.K., Gauchan, B and D.S. **Arya**: 2006, Flood Quantile estimation for Narayani river system of Nepal using pooled flood frequency analysis approach, International Conference on Hydroinformatics, 2006, Nice (France).
38. Babbar, R., Himanshu Joshi and D.S. **Arya** (2006), A waste load allocation methodology for river water quality management. Proceedings of National Conference on Environmental Pollution Control for sustainable development (EPCSD-2006), organized by the Department of Civil Engineering, Engineering College Kota, Kota.
39. Babbar, R, Himanshu Joshi and D.S.**Arya** (2006), DSS: Scope and its application in water quality management. Presented in Indo –Australian Conference on Information technology in Civil Engineering (IAC-ITCE), organized by the Department of Civil Engineering, IIT Roorkee, Roorkee.
40. Goel, N.K., H.H. Than and D.S. **Arya**:2005, Flood Risk Mapping for Lower Part of Chindwin River Basin (Myanmar), Presented in an International Conference on 'Innovation, advances and implementation of flood forecasting technology' held in Norway from October 17-19, 2005.
41. Berhanu, B. and D.S. **Arya**: 2005, TEFASES –A SDSS for Land Capability Classification for Ethiopian Watersheds, Proceedings of the International Conference 'Hydrological Perspectives for Sustainable Development 2005', February 23-25, 2005, held at Roorkee, India organized by the Department of Hydrology, IIT Roorkee, Vol 1, pp 32- 44.
42. Rahman, M and D.S. **Arya**: 2005, Preparation of Irrigation Management Plan using DSS – A case study from Bangladesh, Proceedings of the Fifth International R & D Conference, 15-18 February, 2005, held at Bangalore, organized by Central Board of Irrigation and Power (CBIP), New Delhi, Vol 4, pp 132 – 148.
43. **Arya**, D.S. and S.A. Abbasi: 2001, Identification and Classification of Key Variables and their Role in Environmental Impact Assessment: Methodology and Software Package INTRA, *Environmental Monitoring and Assessment (UK)*, vol 72, pp 277-296.
44. **Arya**, D.S. and S.A. Abbasi: 2001, SMART: A new Software Package for Environmental Trend Analysis, *Journal of the Institution of Public Health Engineers*, Vol. 2001/2, pp.40-51.
45. Roba, G.F., D.S. **Arya**, and N.K. Goel: 2000, Stream Flow Forecasting using Artificial Neural Network, *Water & Energy International*, vol 57(1), pp 30-37.
46. **Arya**, D.S., P.K. Litoria, A. Mathur and P.K. Sharma: 1996, Environmental Trend and Impact Analysis of Ludhiana City, *International Seminar on Environment, Energy and Technology: Regional and Global Perspectives*, held at Banaras Hindu University during December 11-15, 1997, Varanasi, India page 92.
47. **Arya**, D.S., P.K. Litoria, A. Mathur and P.K. Sharma: 1996, Environmental Review of Ground Water Resource of Ludhiana City, *International Seminar on Environment, Energy and Technology: Regional and Global Perspectives*, held at Banaras Hindu University during December 11-15, 1997, Varanasi, India, page 160.
48. **Arya**, D.S., H. Joshi and S.A. Abbasi: 1995, Growth of Roorkee City, *Geographical Review of India*, vol 57(3), pp 223 - 241.
49. Abbasi, S.A., D.S. **Arya**, A.H. Hameed, and Naseema Abbasi: 1995, Water Quality Analysis of a Typical River of Kerala - PunnurpuZha, *Pollution Research*, vol. 15(2), pp 163-166.

50. **Arya**, D.S., H. Joshi and S.A. Abbasi: 1994, Developmental Trends and their Environmental Impact in a Typical Central Indian Town with Special Reference to Roorkee, *Journal of Environmental Monitoring and Assessment* (UK), vol.33, pp.135-150.
51. Abbasi, S.A., P.C. Nipanay and D.S. **Arya**: 1994, Heavy Metals in the Sediments of a River Impacted by Pulp-and-Paper Effluent, *Journal of the Institution of Public Health Engineers*, vol. 1994(2), pp. 18-23.
52. Abbasi, S.A., P.C. Nipanay, R. Soni, and D.S. **Arya**: 1992, Assessment of Water Quality Criteria for Cobalt, Nickel and Copper *vis-à-vis* Impact Studies on Freshwater Teleost '*Nuria Denricus*', *Journal of the Institution of Public Health Engineers*, vol. 1994(2), pp. 8-18.

### **Theses Supervised:**

#### **PhD Theses**

1. Web-based Spatial Decision Support System for Flood Risk Mapping (*ongoing*).
2. Climate Change Impacts on Irrigation System and Agricultural Produce (*ongoing*).
3. Dual Drainage Model for Urban Flood Modeling (2012).
4. Flood Forecasting and Early Warning Studies for Parts of Bangladesh (2011).
5. Optimal Water Utilization and Management of an Irrigation System (2010).
6. Climate Change Studies: A Spatio-temporal Analysis for part of India (2010).
7. A Decision Support System for Tropical River Water Quality Management (2008).
8. Variable Parameter Flood Routing Methods for Hydrological Analyses of Ungauged Basins (2007).

#### **M.Tech/M.Engg/MCA Theses**

1. Flood plain mapping and zoning in plains of Uttarakhand (*Ongoing*).
2. Characteristic of flow under vertical gate with varying geometry of leaf (*Ongoing*).
3. Inventorization and glacial lakes and GLOF study for Twang basin (*Ongoing*).
4. Study of meandering behaviour for parts of the Ganges and Euphrates Rivers using GIS, 2012.
5. Impact of Climate Change on precipitation in Jamuneshwari Basin, Bangladesh, 2012.
6. Impact of ENSO on River Flows in British Guyana, 2011.
7. Assessment of Sediment Transport Rate and Shoreline Evolution in Coastal Environment, 2011.
8. Study of extreme hydrological events and impact of climate change on Rainfalls – A case study of northwestern Bangladesh, 2010.
9. Impact assessment of land use dynamics on urban flooding, 2010.
10. Flood simulation using GIS and MIKE 11 – A case study of Teesta River basin, 2009.
11. Modelling of snowmelt component of runoff of Bhagirathi catchment at Tehri, 2009.
12. Estimation of rainfall and temperature from remote sensing data using artificial neural networks, 2009.
13. River Migration, Design Flood and Scour Depth Computations at Pipeline Crossing, 2009.
14. Urban Flood Modeling: A case study of Roorkee City, 2008.
15. Water Resources management for an Irrigation project using a DSS, 2008.
16. Study of Spatial Variability of Rainfall in Uttarakhand, 2008.
17. Climate Change Effects on Hydrological Elements and Water Resources Components, 2006.
18. Flood Risk Mapping, 2006.
19. Flood risk mapping for East Rapti River, Nepal using GIS and HEC-RAS, 2005.
20. Flood plain mapping using GIS in Lower part of Chindwin River in Myanmar, 2005.
21. Temporal and Spatial Analysis of Rainfall in Uttaranchal, 2004.
22. Development of Resettlement and Rehabilitation Information System for Sardar Sarovar Project using Internet GIS, 2003.
23. Development of SDSS for Land Capability Classification- A Case Study of an Ethiopian Watershed, 2002.
24. Development of spatial information system of Uttaranchal, 2002.
25. Mahanadi Irrigation Projects information system, 2002.
26. Application of DSS in Irrigation Management – A Case Study of Meghna Dhonagoda Irrigation Project, Bangladesh, 2002.
27. Model Assisted Groundwater Assessment of Ghaggar Yamuna doab, 2001.

28. Stream flow Forecasting Using Linear Perturbation Model & ANN Approach, 2000.
29. Artificial Recharge Measures in Problematic Areas of Andhra Pradesh – A case study, 2000.
30. Development of Hydrological Information System for a Micro-catchment, 1999.
31. Stream flow Forecasting Using ANN, 1999.
32. Software Development for Sediment Distribution in Reservoirs, 1999.
33. New Software Package SMART-ALEC, 1994.

## **Projects:**

### **Consultancy Projects/Reports**

1. Application of Remote Sensing Technique for Mapping Water Logged and Salt Affected Area in the Coastal Tract of Orissa, Under Hydrology Project, Phase-II, Directorate of Ground Water Survey & Investigation, Orissa, Bhubaneswar (Ongoing, 2012).
2. Planning For Optimum Development of Ground Water in Coastal Sand Dune Pockets of Orissa, Under Hydrology Project, Phase-II, Directorate of Ground Water Survey & Investigation, Orissa, Bhubaneswar (Ongoing, 2012).
3. Development of Inflow Forecasting System for Tehri Dam, Sponsored by Tehri Hydro Development Corporation Limited, (Ongoing, 2012).
4. Error Removal and Verification of Data of Rargari Site - II, RK Engineering Corporation, Roorkee India, (Ongoing, 2011).
5. Error Removal and Verification of Data of Tamak Lata Site - II, RK Engineering Corporation, Roorkee India, (Ongoing, 2011).
6. Hydrology and Power Potential Studies for Vishnugad Pipalkoti Hydro-electric Projects, Sponsored by Tehri Hydro Development Corporation Limited, New Tehri, (Ongoing, 2011).
7. Validation of Hydrometeorological Data of SEW Sites, Sponsored by SEW Energy Limited, Hyderabad (Ongoing, 2011).
8. Ground Water Coloration Problem of Shabajpur Area Sponsored by Jubilant Organosys Limited, Gajrola, India, (Ongoing, 2010).
9. Review of Gomti Nagar (Extension) Drainage Design, Sponsored by Lucknow Development Authority, Lucknow, India, (Ongoing, 2009).
10. Establishment of Institute of Hydrology and Water Management, Bikaner, M/S Sapience Consultancy and Research Pvt. Limited, Hyderabad, (2012).
11. Review of Reports and Drawings of Dump Sites for Chenani Tunnel, J&K, Sponsored by Leighton Contractors India Pvt. Ltd, Gurgaon, India, (2011).
12. Error Removal and Verification of Data of Rargari Site, RK Engineering Corporation, Roorkee India, (2011).
13. Hydrological Assessment Report (for Nallahs at South Portal, North Portal & South Dump Site at Km 86) on NH 8, Jammu, Sponsored by Leighton Contractors India Pvt. Ltd, Gurgaon, India, (2011).
14. Hydrological Study for Shamshabad Area Sponsored by GMR Hyderabad, India, (2011).
15. Error Removal and Verification of Data of Tamak-Lata and Langasu Sites, RK Engineering Corporation, Roorkee India, (2011).
16. Snow Cover Studies in Nyukcharong Chu and Mago Chu Catchments, Sponsored by SEW Energy Limited, Hyderabad (2011).
17. Meandering Behavior of Ramganga, Ganga and Kali Rivers, Sponsored by GAIL (India) Delhi, (2011).
18. GLOF Studies for Nyukcharong Chu and Mago Chu Hydro-electric Projects, Sponsored by SEW Energy Limited, Hyderabad (2010).
19. G&D Site Selection for Sirkari Bhoval and Rupsia Bagar Hydro Project, Sponsored by RK Engineering Corporation, Roorkee India, (2010).
20. Ground Water Study near Shabajpur and along Bagad River, Sponsored by Jubilant Organosys Limited, Gajrola, India, 2010.
21. Velocity, Cross Section and Discharge Measurement on Chilla Power Channel, Rishikesh, Sponsored by DLZ Corporation, Pune, 2009.

22. Review of Hydrological Studies for Tehri Dam Project, Sponsored by Tehri Hydro Development Corporation Limited, New Tehri, 2009.
23. Study and Analysis of Observed Data of Sukheti Khad Watershed and River Beas, Sponsored by Bhakhra Beas Management Board, Shimla, India, 2009.
24. River Migration and Design Flood Studies for Barmer Salaya Pipe Line Project, Sponsored by Larsen and Toubro Ltd., Faridabad, India, 2009.
25. Hydrological Survey and Investigation at Rajiv Gandhi International Airport, Shamshabad, Sponsored by GMR Hyderabad, India, 2009.
26. Reconnaissance Survey Report of the Impact of Waste Disposal Practices on Ground Water along Bagad River, Sponsored by Jubilant Organosys Limited, Gajrola, India, (2009).
27. Hydrological Studies for Construction of Intake Well of Indian Oil Corporation Limited of Mahanadi Barrage, Cuttack, Sponsored by WAPCOS Limited, (2009).
28. Hydrological Survey at Koteshwar Power Station for Water Supply- Geophysical Investigations, Sponsored by Power Grid Corporation of India Limited, Roorkee India, (2009).
29. Review of Hydrological Studies for Tehri HE Project, Sponsored by Tehri Hydro Development Corporation Limited, (2009).
30. Hydrological Survey and Investigation at Koteshwar for Water Supply, Sponsored by Power Grid Corporation of India Limited, Roorkee, India (2008).
31. Hydrogeological and Electrical Resistivity Survey for Identification of Tube well Location(s) at L.P.G. Bottling Plant Site, Landhaura (Roorkee) for M/S Bharat Petroleum Corporation Ltd., Noida, (1999).

#### **Research Projects**

32. Studying meandering and shifting behavior of the Ganges River in plains of Uttarakhand UCOST, Dehradun, India (ongoing).
33. Inventorization of Industries Using Web and GIS based Techniques for Hardwar and Udham Singh Nagar Districts, UCOST, Dehradun, India (ongoing).
34. Development of Spatial Water and Climate Information System for Uttaranchal, sponsored by Department of Science and Technology, Govt. of India (2009).
35. Meteorological Data Collection, Monitoring, Processing and Analysis to Evaluate Climate Variability in the state of Uttaranchal sponsored by Department of Science and Technology, Govt. of India (2009).
36. Assignment for Developing Research Proposal on 'Early Flood Warning Systems' in Collaboration with the Universities from Egypt, Ghana, Indonesia, Palestine, The Netherlands and Yemen, sponsored by PoWER of UNESCO-IHE, Delft, The Netherlands (2008).
37. General Purpose Software Development for Water resources Information and Decision Support System, sponsored by MHRD, Govt of India (2008).
38. Modernization and Strengthening of Hydrometeorological Laboratory sponsored by MHRD, Govt. of India (2006).
39. Development of Dynamic Flood Frequency Model sponsored by Indian National Committee on Hydrology (Ministry of Water Resources), Roorkee (2005).
40. Development of Hydrological Information and Decision Support System Laboratory for AICTE, New Delhi, (2002).
41. Estimation of Evaporation from Free Water Surface for University of Roorkee, Roorkee, (2001).

#### **Other Reports:**

1. Annual data Reports of 2006, under U-PROBE and Spatial and Climate Information System of Uttaranchal projects sponsored by Department of Science and Technology, Govt. of India, 2008.
2. Annual data Reports of 2005, under U-PROBE and Spatial and Climate Information System of Uttaranchal projects sponsored by Department of Science and Technology, Govt. of India, 2008.

3. Annual data Reports of 2004, under U-PROBE and Spatial and Climate Information System of Uttaranchal projects sponsored by Department of Science and Technology, Govt. of India, 2006.
4. Annual data Reports of 2003, under U-PROBE and Spatial and Climate Information System of Uttaranchal projects sponsored by Department of Science and Technology, Govt. of India, 2006.
5. Environmental Impact Analysis of Groundwater Resource of Ludhiana City (PUNSEN/SR-01-98), Punjab Remote Sensing Centre, Ludhiana, 1998.
6. URBANWARE: An Environmental Information & Decision Support System for Urban Planning, Austrian Academic Exchange Services, Austria, 1998.

#### **Short-term Courses Organized:**

1. International Training Course on Hydrological Analysis for Water Resources Planning and Management in Environmental Aspects, Bangladesh Water Development Board, Dhaka, Bangladesh, 11th -20th June, 2012.
2. International Training Course on Effect of climate Change on Flood Estimates and Hydrological Variables, Bangladesh Water Development Board, Dhaka, Bangladesh, 5<sup>th</sup> -14<sup>th</sup> March, 2012.
3. Crop Water Management, OCTMP, Water Resources Department, Govt. of Odisha, Bhubneshwar, 13-17<sup>th</sup> Dec, 2011.
4. Estimation of Design Flood and design of Spillways for Minor Irrigation Projects, OCTMP, Water Resources Department, Govt. of Odisha, Bhubneshwar, 1-5<sup>th</sup> Dec, 2011.
5. Remote Sensing and GIS Applications in Hydropower Projects, National Hydro Power Corporation Limited, Faridabad, 19-21<sup>st</sup> Oct, 2011.
6. Hydrological Assessment and Water Resources Planning, OCTMP, Water Resources Department, Govt. of Odisha, Bhubneshwar, 26-30<sup>th</sup> Sept, 2011.
7. Remote Sensing and GIS Applications in Hydropower Projects, National Hydro Power Corporation Limited, Faridabad, 20-22<sup>nd</sup> June, 2011.
8. International Training Course on Flood Estimation in a Changing Climate, Institute of Water Modelling, Dhaka, Bangladesh, 6<sup>th</sup> -12<sup>th</sup> March, 2011.
9. Use of ArcGIS and MODFLOW in Analysis and Modeling of Groundwater in Hard-rock Areas, Ground water and Surveys and Development Agency, Pune, Govt. of Maharashtra, Nov 22 – Dec 11, 2010.
10. International Training Course on Urban Flood Modelling and Drainage Design, Lunawa Environment Improvement & Community Development Project (Technical Component), Ministry of Urban Development and Sacred Area Development, Govt. of Sri Lanka, 22-27<sup>th</sup> March, 2010.
11. Remote Sensing and GIS Applications in Hydropower Projects, National Hydro Power Corporation Limited, Faridabad, 22-27<sup>th</sup> Feb, 2010.
12. Hydrological Analyses and Planning for Water Resources Projects with Exposure to Emerging Tools, Hydrology Project, Irrigation Department, Govt. of Maharashtra 16<sup>th</sup>-21<sup>st</sup> Nov, 2008.
13. Urban Flood Modelling and Drainage Design, Mumbai Metro Region Development Agency, Mumbai, 22-27<sup>th</sup> Sept, 2008.
14. Planning, Analyses and Modeling of Groundwater in Hard Rock Areas, Ground water and Surveys and Development Agency, Pune, Govt. of Maharashtra, 1-6<sup>th</sup> Sept, 2008.
15. Planning, Analyses and Modeling of Groundwater in Hard Rock Areas, Ground water and Surveys and Development Agency, Pune, Govt. of Maharashtra, 18-23<sup>rd</sup> August, 2008.
16. Groundwater Planning, Analyses and Modelling In Hard Rock Areas, Department of Mines and Geology, Govt. of Karnatka, 21-26<sup>th</sup> July 2008.
17. Hydrological Analyses and Planning for Hydropower Projects with emphasis on Design Flood Estimation, National Hydro Power Corporation Limited, 9-14<sup>th</sup> June, 2008.
18. Hydrological Analyses and Planning for Hydropower Projects with emphasis on Design Flood Estimation, National Hydro Power Corporation Limited, 17-22<sup>nd</sup> December, 2007.



19. Hydrological Analyses and Planning for Hydropower Projects with emphasis on Design Flood Estimation, Damodar Valley Corporation Limited, 1-6<sup>th</sup> October, 2007.
20. Hydrological Analyses and Planning for Hydropower Projects, National Thermal Power Corporation Limited, 20-25<sup>th</sup> August, 2007.
21. Hydrological Analyses and Planning for Hydropower Projects with emphasis on Design Flood Estimation, National Hydro Power Corporation Limited, 2-7<sup>th</sup> July, 2007.
22. Hydrological Analyses and Planning for Hydropower Projects, Satluj Jal Vidut Nigam Limited, 19-24<sup>th</sup> February, 2007.
23. Hydrological Analyses and Planning for Hydropower Projects with emphasis on Design Flood Estimation, Damodar Valley Corporation Limited, 18-23<sup>rd</sup> December, 2006.
24. International Refresher Course on 'Urban Flood Modeling and Disaster Management' in association with UNESCO-IHE, Delft funded by NUFFIC, The Netherlands organized at IIT Roorkee, India, 12-19<sup>th</sup> October, 2006.
25. Hydrological Analyses and Planning for Hydropower Projects with emphasis on Design Flood Estimation, National Hydro Power Corporation Limited, 31<sup>st</sup> July – 5<sup>th</sup> August, 2006.
26. Hydrological Analyses and Planning for Hydropower Projects, National Thermal Power Corporation Limited, 5-10<sup>th</sup> June, 2006.

#### **Software Developed:**

1. Development of 'Spatial Climate and Water information system of Uttaranchal' using VB, C++ and ArcEngine toolkit (2009).
2. Development of macro-based software for Irrigation Management and Canal Scheduling for Excel using VBA (2008).
3. Development of macro-based software for Trend and Shift Analyses for Excel using VBA (2008)
4. Development of Irrigation Management and Canal Scheduling Decision Support System using VB, and FORTRAN (2008)
5. Development of 'DSS for Water Quality Management' using VB and SQL Server (2007).
6. **RISSS**, Resettlement and Rehabilitation Information System for Sardar Sarovar Project, 2003, Lang/Dev Env.: HTML, ASP and ArcIMS Internet GIS.
7. **SISU**, Spatial Information System of Uttaranchal is a standalone GIS software that provides diversified information about the State, 2002, Lang/Dev Env.:VB6 and Map Objects.
8. **TEFASES**, Spatial Decision Support System software developed for Land Capability Classification for Ethiopian Watersheds, 2002, Lang/Dev Env.:VB6, VC++6 and ArcGIS.
9. **HYDROWARE**: HydroWare is a GIS based Hydrological Information System especially tailored for micro catchments, 1998, Development platform: Visual C++.
10. **URBANWARE**: UrbanWare is an environmental information and decision support system developed for urban planning. This is a X Windows based software, which has a special purpose built-in GIS, 1996-1997, Development platform: SUN C++ Workshop.
11. **CREAM** (Computer-aided Rapid Environmental evaluation And Management): A software for integrated evaluation of environmental quality in an environmental system and policy analysis, 1994-1995, Development platform: Turbo C.
12. **INTRIA** (INTEr-parameter Relationship Analysis): A software package for studying inter-parameter relationship in an environmental system, 1994-1995, Development platform: Turbo C.
13. **SMART-ALEC** (Statistical Measurements for Assessing Regional Trends and Long Term Environmental Consequences): An enhanced and advance version of SMART software, 1993-1995, Development platform: Turbo C.
14. **PONCED** (PONdicherry CEntralized Database): Industrial database software for Pondicherry Union Territory. 1994-1995, Development platform: dBase, FoxPro, Clipper.
15. **MANDAT** (MANali DATAbase software): A data retrieval system developed for various industries located in Manali industrial estate, 1993-1994, Development platform: dBase, FoxPro, Clipper.
16. **BIOMASS** (BIological Measurements and ASSessments): Software developed for assessment of plant diversity and richness, 1992-1993, Development platform: Turbo C.

17. **SMART** (Statistical Measurements for Assessing Regional Trends): To analyze trend and its statistical significance in a time series, and to forecast the trend, 1991-1992, Development platform: Turbo C.

#### **Awards Received:**

1. **Young Academic Award** to work as Visiting Faculty at UNESCO-IHE, Delft, The Netherlands.
2. **North-south Dialogue Scholarship** to work on GIS based DSS in Austria
3. Master of Engineering with **Distinction**.
4. **Institute's Medal** for securing highest marks in the Institutions of Engineers, India

#### **Visits Abroad**

1. Technical University, Harburg, Hamburg, Germany (13 -18/7/2012)
2. Climate Service Centre, Hamburg, Germany (15 - 16/7/2012)
3. WMO, Geneva, Switzerland (18 - 20/7/2012)
4. Reading University, Met Office, UK (20-28/8/2011)
5. WMO, Geneva, Switzerland (4 - 6/4/2007)
6. UNESCO-IHE, Delft, The Netherlands (25/3/2007 – 3/4/2007)
7. UNESCO-IHE, Delft, The Netherlands (17/6/2005 – 14/11/2005)
8. Catholic University, Bandung, Indonesia (11 - 21/5/2005)
9. UNESCO, Paris, France (11 - 12/3/2005)
10. UNESCO-IHE, Delft, The Netherlands (6 - 9/3/2005)
11. UNESCO-IHE, Delft, The Netherlands (7/12/2004 - 7/1/2005)
12. Environmental Software and Services GmbH, Austria (Oct 1996 - Dec 1997)

#### **Memberships:**

1. Fellow, Institution of Engineers (India)
2. Member, Indian Association of Hydrologists
3. Member, International Association of Hydrological Sciences

#### **Co-curricular Activities:**

1. O.C. (M.Tech Class)
2. Convener, International Conference On Challenges in Disaster Mitigation & Management Strategies, Feb 2013.
3. Chief Warden, Rajeev Hostel, 2010 onwards.
4. OC (Computer labs), 2006 onwards.
5. OC (HIS LAB), 2001 onwards
6. Staff Advisor (Dramatics) with Institute's Cultural Society, 2000 - 2012.
7. Treasurer, Series of National research conference on Disaster Mitigation in Housing in India, 2009-2010.
8. Joint Organizing Secretary, 3rd State Science & Technology Congress, 2008.
9. OC Lab/Stores, 1998 – 2006.
10. Joint Organizing Secretary, International conference on Hydrological Perspectives for Sustainable Development, 2005
11. Warden of the Cautley Hostel during 2005-2006.
12. Dy. Chief Advisor of Thomso (Institute's Youth Festival) 2003, 2004 and 2006.
13. Staff Advisor (Stores), Institute's Sports Council (2003-2005).

## **Personal Details**

<b>Permanent Address</b>	<b>DR D.S. ARYA,</b> VILLAGE MATLABPUR, POST OFFICE - ROORKEE, ROORKEE – 247 667, INDIA TEL : + 91 94120 72400
<b>Date of Birth</b>	May 22, 1967
<b>Nationality</b>	Indian
<b>Passport Details</b>	Passport No: E9064183      Date of Issue: 1/6/2004 Place of Issue: Bareilly, India      Date of Expiry: 31/5/2014
<b>Languages</b>	English and Hindi (speak, read & write); Tamil (to manage with)
<b>Hobbies</b>	Trekking, hiking, acting and traveling.
<b>Extracurricular Activities</b>	<ol style="list-style-type: none"><li>i. Trekked through the Sela pass (@ an altitude of 13700 ft) in Arunachal Pradesh, India, Feb 2011.</li><li>ii. Tracked to Rargari near Milam glacier, Munsiyari, Jun 2010.</li><li>iii. Drove motorbike (Honda CBZ 156 CC) to the highest motorable road of the world (Khardungla Pass @ 18300 ft 50 km from Leh City) from Roorkee (more than 1000 km) in June 2002 and crossed three other passes on the way (altitude range: 15000 to 17000 ft).</li><li>iv. Trekked in the middle Himalayas (up to altitude 16000 ft) around Nanda peak during Raj Jat festival in Jul/Aug 2000.</li><li>v. Won the first prize in state level drama competition in Pondicherry Union Territory in 1993.</li></ol>