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Compendium of Projects/Papers

Development of a software named LaSIRF :: (2004 - till date)

- Project Guide
  - Dr. Manoj Arora, Associate Professor
    Geomatics Engineering, Department of Civil Engineering
    Indian Institute of Technology Roorkee (www.iitr.ac.in)
- Synopsis
  - LaSIRF, a program specifically developed for route planning in areas susceptible to landslides, like the young mountains of Himalayas and Alps. It utilizes various input data layers, viz., DEM, geological structure, lithology, landuse/landcover, and landslide hazard zonation.
- Paper Published (under communication)
  - "LaSIRF: **La**ndslide-**S**afe **I**ntelligent **R**oute **F**inder for mountainous terrain in GIS environment"
    Journal of Computers and Geosciences

GIS Based Route Planning in Landslide Prone Areas :: (2003-2004)

- Project Guide
  - Dr. Manoj Arora, Associate Professor, IIT Roorkee
  - Dr. R. P. Gupta, Professor, Earth Sciences, IIT Roorkee
- Synopsis
  - Implementation of Dijkstra's Algorithm for finding Shortest Route using C++. This included processing of Satellite Image for nodal heights/hazard factors for determining cost factors for moving from one pixel to another.
- Paper Published (accepted to be published in 2005)
  - "GIS Based Route Planning in Landslide Prone Areas"
    International Journal of Geographical Information Science

Processing of Tb Data using IRS P-4 satellite data :: (June-July 2003)

- Project Guide
  - Dr. K. S. Rao, Principal Research Scientist
    Centre for Studies in Resource Engineering
    Indian Institute of Technology Bombay (www.iitb.ac.in)
- Synopsis
  - The satellite data from Indian Remote Sensing Satellite (IRS P-4) was processed to obtain Tb (Brightness Temperature) maps of the Himalayan Region for Snow/Ice Studies. It included imaging of Himalayan Snow/Ice form the satellite data (Passive Microwave Remote Sensing).

Development of Virtual Fluid Mechanics Laboratory :: (June-July 2002)

- Project Guide
  - Dr. G.L. Asawa, Professor
    Department of Civil Engineering
    Indian Institute of Technology Roorkee
- Synopsis
  - It was Summer Undergraduate Research Award (SURA-2002) funded project. A project for the Development of Virtual Laboratory for Fluid Mechanics including simulation of experimental setup using Visual Basic 6.0 & AVI Animator. Program coding done using VB 6.0 for the algorithms used to perform the calculations.

Field Survey Camp- Development of Topographic Map :: (December 2002)

- Filed Survey Camp, an academic exercise by the Department of Civil Engineering, IIT Roorkee. It included Plane Table Survey, use of Dumpy level and Theodolite, GPS Survey and development and coloring of topographic map of Haridwar region.

TECHNICAL SKILLS

- Programming Language: C/C++, Visual Basic
- Web Development : HTML, CSS and beginner in SQL
- Operating System: Linux, MS Windows XP/Me/2000/98/95
- Packages: MATHCAD, MS Office, Macromedia Flash, Adobe Photoshop, ArcView, ArcGIS, ILWIS, ERDAS Imagine

Proficient in C++ programming. Skilled in graphics, audio, video, and 3D visualizations. Experienced in web design, FLASH animation, and multimedia presentations.

EDUCATION

Bachelor of Technology in Civil Engineering (Graduation Date: May, 2004)
Indian Institute of Technology Roorkee, Roorkee 247 667 UA, India
GPA: 6.46 (on a scale of 10)

AWARDS/ACHIEVEMENTS

- 3rd Prize, SYNAPSE, a national level competition on Remote Sensing during COGNIZANCE ´03, technical festival of IIT Roorkee
- Summer Undergraduate Research Award (SURA-2002) for completion of the proposed project
- National Cadet Corps (NCC) 'C' certificate with a rank of Under Officer
- Participated in Indian National Biology Olympiad workshop (INBO-99) at Homi Bhabha Centre for Science Education (HBCSE) Mumbai
- National Talent Search Examination 1997 Scholarship (NTSE) holder, by National Council of Educational Research & Training (NCERT) New Delhi