

SOCIETY OF GEOINFORMATICS ENGINEERS

INSTITUTE OF REMOTE SENSING
ANNA UNIVERSITY, CHENNAI

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GEOVISION

From the Director's Desk

DR. M. RAMALINGAM, DIRECTOR, IRS

The Society of Geoinformatics Engineers (SGE) is a cohesive conglomerate of Geoinformatics students of Institute of Remote Sensing in College of Engineering, Guindy (CEG), Anna University. The Society is one of its kind, especially since no other student body could inspire the students to learn the skills and the art of expression of new and varied ideas. The students are encouraged to speak out their mind, and bring out new concepts and thoughts in public forums, like symposiums and interdisciplinary workshops. Moreover the society also acts as an efficient bridge between the student community and the industrial community, thus eliminating the gap between the student's theoretical knowledge and the applications for real time situations.

The SGE Newsletter GEOVISION is a new of inception for the academic year and its main objective being an effective platform to showcase the student's activities, their achievements and their innovations in the direction of the current technology. I am sure, the newsletter will trigger the inspiration of the student community and motivate them to bring about a revolution in the field of Geomatics.

I appreciate the students and the organizers for their initiative and wish them good luck.

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About SGE

The Society of Geoinformatics Engineers is composed of the Geomatics professionals under development; that is, the students of Geomatic Engineering. The Society was inaugurated on 30th September, 2004 by Dr. Navalgund, Director, NRSA, Hyderabad. The Society operates with the vision of Geomatics professionals serving the country with the latest equipment and state-of-the-art technology. This student body aims to keep in touch with reality and the present times, and the students are updated on the recent developments in Remote Sensing, Geographic Information Systems and other related fields.

Weekly activities are conducted to familiarize the fundamentals of the related fields. The Society is keen on arranging guest lectures, seminars and presentations by eminent leaders in related disciplines. The Society also encourages group activities, thus helping the students to realize the importance of team work.

What started off as a small drop of an initiative by a bunch of enthusiastic students at IRS has now grown into a mighty ocean, surpassing all odds. The students are exposed to the latest developments and technology and also the present scenario. Hence they are readied to provide whatever is expected of them.

The Society inspires the students to think and bring about a revolution in the field of Geomatics and to make the world a better place.

SGE publishes a monthly issue of its activities through its newsletter "GEOVISION". Celestia and Geo horizon are the national level technical symposia that are conducted in the months of October and March respectively. These symposia showcase the talent pool of the student community of IRS and other colleges and instigates out of the box thinking.



SOCIETY ACTIVITIES

Society of Geoinformatics Engineers (SGE) is a buzz with activities conducting personality development programmes and organizing guest lectures for the benefit of the students. Here's a page from the diary of SGE calendar mentioning the chronological order of activities held over the past weeks.

- Guest Lecture on Spatial Modelling by Ms.Novaline Jacob, Scientist "SE" ADRJN, Dept. of Space, Secunderabad
- Inspirational Talk about the Internship programme at University of Stuttgart, Germany by Ms. Rohini SS, 7th Sem B.E. Geoinformatics
- Guest Lecture by Shri Ch.Venkateshwara Rao, NRSA, Hyderabad
- Guest Lecture on Recent Technology Trends at ESRI by Mr.Antony Prakash, Project Engineer, ESRI, Redlands, California.
- Technical Talk on Computer Vision - Internship Project at IIT-Delhi by Mr.Srinath S 4th yr, B.E. Geoinformatics & Mr.Sanath Kumar, 4th yr, B.E. CSE
- Lecture on Urban Planning & Climate Change by Mr. Eswar R, 4th yr B.E. , Geoinformatics
- Internship programme at ISRO, Bangalore by Mr.Yogesh D 4th yr B.E. Geoinformatics
- Open Source GIS Workshop by Kcube Consultancy Services





ALUMNI TALK

BHUVAN – THE INDIAN GEOINFORMATION PORTAL

RRSSCB / ISRO

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ATMA BHARATHI M.
SCIENTIST, RRSSCB/ISRO

Two months, is the age of ISRO's brainchild – Bhuvan. After an unusually long incubation period of 20 months inside the labs of RRSSCB, Bhuvan, the Indian Geoinformation portal was born on August 12th 2009. My primary motive behind this article is neither to compare Bhuvan with other Earth browsers nor to elucidate its various functionalities but to take you through a journey of its history and to disclose the very reason for its founding.

If you were to saddle a falcon and watch the country, you would find the Indo-gangetic plains declared drought hit, the Deccan declared flood hit, the east coast as Tsunami hit. Despite a bunch of Earth Observation satellites, tens of centres for natural resource and disaster management, hundreds of scientists working on remotely sensed data, India is still a developing nation grappling

with repeated setbacks unable to predict and mitigate such events. In spite of extensive mapped information, our cities and towns are one of the worst to navigate, the produce and demand for basic amenities such as water, food grains, power is still remains unpredictable at large. The culprit, in my opinion, is not lack of information, but opacity and absence of a shared vision amongst the various centres.

ISRO today has over two dozen geospatial information systems like NNRMS, NRIS, Bhoo Sampadha, PMOGIS, WRIS to name a few and a dozen more are in the making. Although these systems cover the same region under different themes, we have hardly put them together for a common objective. Locating this lacuna, the present Chairman decided to synergize and thus came Bhuvan into the world. Today's beta version of Bhuvan has made a modest attempt at synchronizing the enormous databases warehoused at different centres.

A close look at the different themes would reveal Bhuvan and Google Earth are disparate in terms of the services they cater. While Google is good in terms of scalability, speed, and ubiquity and fun quotient of information it provides, Bhuvan rather provides academic, documented, research ready data. Any geo-literate user is expected to use Bhuvan to accentuate one's change detection studies, climate change studies, know the administrative boundaries at different levels. The extensive thematic information would be a boon to academicians and researchers. This way, I see Bhuvan and other Earth browsers like Google Earth, Microsoft's Virtual Earth, and NASA World Wind only complementing each other.

At this juncture, I am proud and happy to say that IRS alumni have played a pivotal role and contributed in a big way for Bhuvan.

Bhuvan has taught us valuable lessons. While it has denoted our lacunae, it has also connoted the depth of efforts what other players with similar endeavour have undertaken. At the end of the day, we find a lot of homework to be done. The manual and time consuming job involved in georeferencing some 25,000 satellite imageries needs to be automated. The site in general needs a facelift. Further, the entire setup needs to be made indigenous from the scratch. This is exactly where young minds can contribute.

Such efforts would have multifarious benefits. The temporal resolution of the entire country can be refined; with additional hardware much more thematic information could be stored; and finally all of this can be provided with an aesthetic interface that is both reliable and scalable.

My dream for Bhuvan would be a day, when the entire tome of processes are streamlined and automated right from georeferencing images to filtering half hourly weather data from the 1000 odd Automated Weather Stations with ample contributions from the students of IRS.



INTERNSHIP WITH WISE 2009 IN STUTTGART, GERMANY

Rohini S S
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A dream-come-true experience...

It all started on a rainy day, in my University grounds, when I met my Professor adventitiously. He referred to the WISE Program by DAAD, witnessing an advertisement in The Hindu! Three words kept echoing in my mind: 'WISE', 'DAAD', 'GERMANY'. I made a quick attempt in knowing more about the scholarship or whatsoever it meant. I was able to collect some first hand information and vaguely understood that I was in need of an offer letter from a German host, that he/she wanted to involve me in his/her project. Sounds incredible! Where in the world that might be possible? Moreover, it was so unfortunate that there were only three days left before the last date and I wasn't sure, if this would ever be possible.

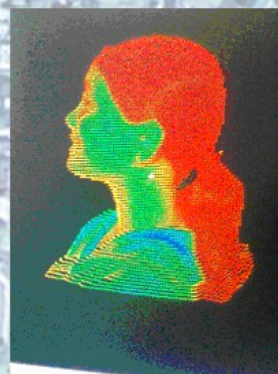
As a follower of the words of Winston Churchill, I was not ready to give up! So, searched all the University websites in Germany, despite the fact that most of them were in German, and finally sent a 'formal' mail to all the Professors after knowing their field of work. In a day, I got an offer from a Professor in University of Stuttgart. I was so fortunate to complete all the procedures, on time and sent the application successively. The procedure was relatively very simple.

When I received the mail from DAAD, Delhi, carrying the information that I got selected, I didn't have any words to explain how I felt. It was the first time for me to cross the Indian border, all alone, to a completely foreign land to work in a foreign university. I didn't worry much about the linguistics problem, as I was 'confident' on my 'little knowledge' in Deutsch.

Stuttgart was new and different. The people were too friendly to feel the land to be some foreign place. The working ambience was more than perfect. I was asked to work on 'Lidar Point Cloud Interpolation'. I had been given a real time LIDAR data of the city of Stuttgart and my task was to compile all the methods of interpolation and to come out with an optimal solution, which could possibly represent the situation in the real time world. Another task of mine is to automate the identification and removal/replacement of outliers in the given data due to the abnormal reflections of glass roofs.

I chose to work in MATLAB, as I thought it would be relatively simple, but they all preferred working in an open source environment. The prowess of open source was actually better

*As an object for my
Prof's project!!!*



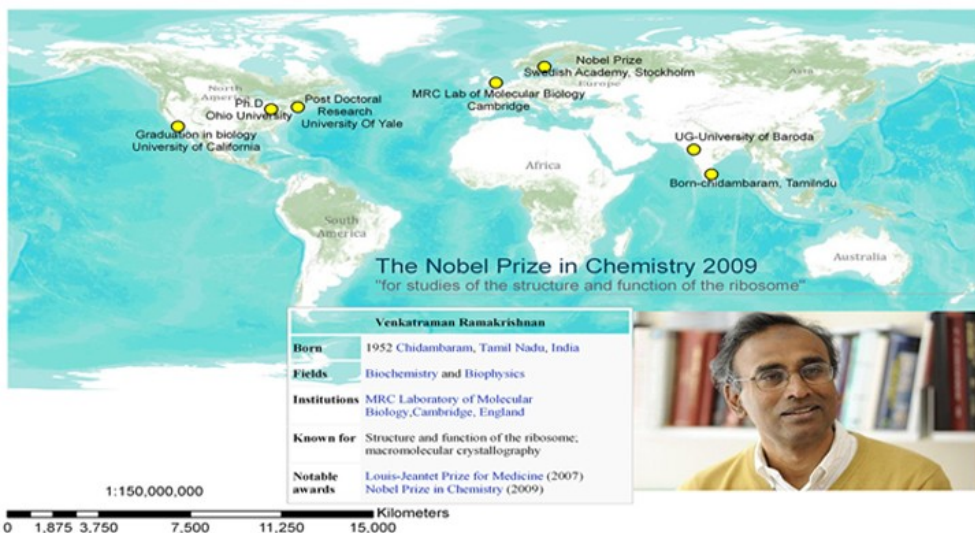
emphasized in all the developing countries. Starting from simple programming to complex LIDAR Processing, they made it a point that it was done in an open source environment. Sometimes it was even hard to see a system running Microsoft!

I started with the simple interpolation work. It was all fine and good to try with all the basic interpolation methods starting from Nearest Neighborhood to Cubic convolution. Some methods like Kriging and Polynomial Regression demanded my grey cells to die out. Integration of methods was highly challenging, not to mention that it was almost impossible. When it came to the detection and removal of Outliers, it became as simple as designing a filter. When I was almost done with this work, I worked along with one of my colleagues, who was involved in 3D modeling using LIDAR data. It was basically an attempt to produce a 3D model of some object, only by using the z values with the help of a terrestrial LIDAR device (SR4000). They were searching for an object to model it and check if their algorithm worked perfectly and they were so very lucky that they finally got a living object and that was me!

This two months and ten days were the only time period in my life, I lived alone, managing everything on my own. It helped me to develop both my technical knowledge and also myself. It served as a better gateway for my wanderlust. I also got a chance to see certain places including the Berlin Wall, Werfen Ice caves, International Court of Justice, The Hague, etc. Living independently, managing my finance on my own (not to mention that I got my stipend only after 30 days!), being punctual (!), learning to enjoy every moment of life, celebrating birthday in a foreign land, planning a weekend trip to Switzerland, a trip to CERN inside the Large Hadron Collider (!) were some things in life, I have never known before. Thanks to DAAD, I finally learnt cooking too!

MAP OF THE MONTH

From Chidambaram to Stockholm-A nobel journey



Know your Extensions

Solar Radiation Tool

The solar radiation analysis tools, in the ArcGIS Spatial Analyst extension, enable us to map and analyze the effects of the sun over a geographic area for specific time periods. It accounts for atmospheric effects, site latitude and elevation, steepness (slope) and compass direction (aspect), daily and seasonal shifts of the sun angle, and effects of shadows cast by surrounding topography. The module can be used to calculate Watt-Hours/meter² at the surface at the local scale. Inputs to this process are a digital elevation model (DEM), the latitude of the scene center, and the date and time that we wish to accumulate insolation (incident solar radiation). We can specify a portion of a day, or a range of days such as a week or month.

Hawth's Tools

Hawth's Analysis Tools is an extension for ESRI's ArcGIS (specifically ArcMap). It is designed to perform spatial analysis and functions that cannot be conveniently accomplished with out-of-the-box ArcGIS.

Most of these analysis tools have been written within the context of the ecological applications (movement analysis, resource selection, predator prey interactions and trophic cascades).

There are three types of tools in this kit. First, there are simple tools that automate mundane tasks (e.g. deleting many fields at once from a table). These will likely be useful to anyone.

Second, there are tools that are designed to be part of an analysis workflow. For instance, random point (or stratified random point) generation, minimum convex polygon delineation, summarizing raster layers in various ways, etc.

These too are likely to be useful to many people.



COMPUTER VISION

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We have all seen movies in which an actor says "enhance" and a CCTV image of the villain's face gets enhanced or another movie in which a 3D model of the Pentagon is generated from a camera on a person's pen. We dismiss these as mere fantasies or call them "Science Fiction". The fact of the matter is that such feats are no longer considered science fiction. People in the computer science community call them applications of Computer Vision.

Computer vision may be defined as a branch of computer science that studies the science behind letting computers "see". Seeing is something that most of us take for granted. We see some object or the other all the time. More importantly, we are able to recognise what object we are looking at. This may sound like a trivial activity but anyone with some experience in digital image processing will concede that object recognition is one of the toughest problems to crack. Consider for a moment a person is in the midst of a thousand people inside CEG's main canteen. He is in search of his friend with whom he wants to have lunch. The human brain has the capacity to scan all faces in the canteen and identify the person in discussion within a matter of seconds, if not minutes. The complexity involved is tremendous, yet the human brain does it extremely efficiently. Now imagine doing that with a computer.

The problem of object recognition is one of the greatest and toughest problems of computer vision. Computers lack the one thing that the human brain possesses, at least for the moment -- intelligence and sheer power. The human brain with 10 billion neurons and 60 trillion interconnections between them is a massively parallel distributed processing unit. With each neuron acting as a processing unit, the human brain is easily the fastest supercomputer in the world. It is with such power that the brain is able to recognise objects and understand what the eye sees. Computers do not have this privilege. In the place of sheer numbers computers have extremely efficient algorithms to solve problems like object recognition. This not only makes object recognition possible but also efficient, though not as efficient as the brain. Computer vision, therefore, has a lot to offer the curious in terms of challenges to solve "unsolved" problems.

In addition, computer vision has an interesting connection with something that we are all familiar with - Photogrammetry. Enabling computers to "see" involves not just recognising objects but understanding the object and its environment. This is called scene or image understanding. Often, this involves "seeing" in 3D as all mammals do using stereo vision. This is very important in robotics where the robot has to know its spatial location with reference to its environment. Photogrammetry which had its humble beginnings on a balloon in

France is today used by a robot to map the Martian surface. Now, would Nadar have imagined that?

Computer vision is not just about object recognition or 3D perception. It involves a lot of other little problems like image enhancement, image understanding, image compression, alternative forms of imaging and so on. The list is simply too big to lay down. The thing that one would want to take home from this discussion is that computers, like it or not, are invading every aspect of human life. As computers begin to evolve and new branches of study spring up, the number of applications of the new studies will impact every one of our lives in profound ways but often without us realising. Computer vision is one such upcoming area that is quietly making our world.

They say that seeing is believing. Do we have what it takes to see what computers "see"?

GISTionary

OSM - OPENSTREETMAP

A collaborative to create a free editable map of the world. The maps are created using data from portable GPS devices, aerial photography, other free sources or simply from local knowledge.

OGC OPEN GEOSPATIAL CONSORTIUM

An international consortium of companies, government agencies, and universities participating in a consensus process to develop publicly available geospatial and location-based services. Interfaces and protocols defined by OpenGIS specifications support interoperability and seek to integrate geospatial technologies with wireless and location-based services.



TRAINING AT THE TRIANGLE

V JAYAKRISHNAN, J MANOJ, M PETCHIYAPPAN, M NAMBI MANAVAN, B.E. GEOINFORMATICS V SEMESTER
(78°33'11.54"E, 17°24'30.30"N), (78°33'33.89"E, 17°24'5.70"N), (78°32'57.05"E, 17°24'4.97"N)



We all know three coordinates define a simple triangle. But this simple geometric shape acquires much more significance within the bounds of the given coordinates, i.e., the Survey of India, Hyderabad centre as all surveys are part of a great triangle. The SOI, Hyderabad hosts the Indian Institute of Surveying and Mapping (IIS&M) among other research offices of the Survey of India. They conduct various short and long term courses ranging from one week to six months on various subjects related to modern survey.

This year during the summer vacation, four of us decided to go for a one month intensive training in the fields of GIS, digital photogrammetry and other spatial technologies. IIS & M provided us an ambient and conducive atmosphere to learn and practice what we learn. The teachers were the best in their respective fields. We got a first hand experience of using mapping softwares like ArcGIS, ArcPad as well as Image processing and photogrammetric softwares like ERDAS and LPS combined with rigorous theoretical background. We were expected to do a project at the end. We accomplished the project and were appreciated for our involvement in the project.

We would like to place our sincere thanks to the Additional Surveyor General, IIS&M, Major General Dr. B. Nagarajan who gave us such a wonderful opportunity to learn at his institute. We would also like to thank the Course Officer, Shri. B. Gnaneshwar and other faculty members esp. Mr. Panigrahi, Mr. A.K. Das, Mr. A.K. Rath, Mr. Nithyanandam, Ms. Shraddha, Mr. P. N. Das, Mr. G.C. Nayak and Mr. Proboji.

Student Achievements

K.R. SHARANYA, R. QUEEN SURAJINI - *I PRIZE*
B.E. GEOINFORMATICS (5TH SEM)

CACHE '09, NATIONAL LEVEL INTER-COLLEGE
TECHNICAL SYMPOSIUM CONDUCTED BY
DEPARTMENT OF COMPUTER SCIENCE, SASTRA
UNIVERSITY.
TOPIC: 3D RECONSTRUCTION AND
VISUALIZATION FROM A SINGLE VIEW

SHRUTI, SHIRLY STEPHEN, ROSHNI PATTANAIK
I PRIZE
B.E. GEOINFORMATICS (5TH SEM)

CIVILZ'09 @ NOORUL ISLAM ENGINEERING
COLLEGE ON SEP30

TOPIC: SITE SELECTION FOR DISPOSAL OF
MUNICIPAL SOLID WASTE USING GIS

AISHWARYA.R - *I PRIZE*
B.E. GEOINFORMATICS (5TH SEM)

CONTECH'09 - NATIONAL LEVEL CIVIL
ENGINEERING SYMPOSIUM
TOPIC: GREEN TECHNOLOGY &
ENVIRONMENT





AN ATTEMPT TO PREDICT EARTHQUAKES!

Paper Presentation @ MapWorld Forum'09

ESWAR R, YOGESH D AND KODIMALAR T
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Earthquakes are known to mankind for a long time and these are considered as the most dangerous of all the natural hazards. The main reason for this is earthquakes; unlike other disasters cannot be predicted before they occur. Earthquake causes huge loss of lives and property but the ironical part of this is earthquakes; by themselves; do not kill anyone!

We three students formulated an approach to predict the earthquakes and presented the same at the Map World Forum 2009 held at Hyderabad.

As students of geomatics we always have the ambition to provide solution to some communal problem with the help of the technologies that we learn and our interests turned towards earthquake since we basically have interest in earth sciences.

We started some work relating to prediction of earthquakes and Dr. Sanjeevi, Professor, Dept. of Geology; Anna University guided us and gave suggestions for our work.

At that juncture, we came to know about the Map World Forum and planned to showcase our work there. We submitted the abstract on the last date that too with very little confidence about getting selected for presentation since our work have to compete with works of other experts

A surprise shock came to us in form of e-mail stating that our paper was selected for presentation in the disaster management session of the conference. We were also excited to see that all others who got selected were experts in the field with a Ph. D following their names and we are students undergoing a bachelor degree!

The conference took place from 10th to 13th February 2009 and our presentation was slotted on 13th afternoon. In the first three days we had little complex about our inexperience and even bit tensed about doing a presentation. We slowly gained confidence as we interacted with many high profile people and they encouraged us a lot knowing that we are young students.

Finally the day arrived and we three went fully prepared to the venue after a long rehearsal the previous night. It was Eswar.R who made the presentation and in order to feel light he just took fruits for lunch that day when we were served with a variety of foods!

The presentation went very fine and we were on cloud nine after seeing the positive response of the audience. We were very happy about the success of our very first big effort. Especially Dr. Joerg Szarzynski, Senior Expert in United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) greeted us and encouraged to carry forward with the work.

Before returning to Chennai, we enjoyed roaming Hyderabad and returned home happily.

According to us what we feel more important is we learnt the art of interacting with other people who are all much senior to us and also to be a part of such big gathering. One more thing that we will remember always is the food served at the conference!

Looking for more such opportunities!

*Eswar R during the Paper Presentation session
at Map World Forum '09*





CONTECH'09 - NATIONAL LEVEL CIVIL ENGINEERING SYMPOSIUM

AISHWARYA R
B.E. GEOINFORMATICS V SEM

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Contech '09 was a national level technical symposium hosted by Nirma University, Ahmedabad on 25th and 26th September 2009. It was a place where Technocrats from all over India gathered to present their solutions for problems which have been a long standing myth for scientists around the world. The symposium included various workshops and oral presentations. The topics for the oral presentations involved Structural and Earthquake Engineering, Infrastructure development, energy management and audit and Go Green.

My presentation was apropos the theme "GO GREEN" where I used the Remote Sensing technology to derive an algorithm for Total suspended particulate matter in the atmosphere and also expatiated the effects of aerosol optical depth and temperature on Pollution mass. This section received various innovative answers for promoting Green Environment. This topic was answered by people from various departments from all over India. Civil engineering stream focused on materials that can buttress the Green Buildings, Chemical engineers discussed the various types of paints that can be used to avert the warming of atmosphere, Nanotechnologists briefed the impact of nano particles on Green Buildings. The anthropogenic connection to climate change is primarily due to pollution. Hence monitoring and evaluation of the amount of pollution has more ascendancy than any other factor.

My presentation dealt in detail about the monitoring of pollution using satellite images and various data products from satellite imageries which can compute the level of pollution mass in the atmosphere. Eventually, I derived an algorithm for finding the amount of Total suspended particulate matter at a particular place at constant atmospheric temperature and aerosol optical depth. The digital pollution models which were created highlighted the rise and fall of pollution at various locations within the boundary of Chennai City. My document also ratified the warming up of the tropical countries in the recent years from the analysis. Further, the ideas were extrapolated to delve into the most challenging impact of tiny aerosols like particulate matter on Global warming. One of the judges for the presentation was from SAC-Ahmedabad who was working on Environmental issues. The idea was well received by the audience. I was awarded the first prize in this session. In compedience, Remote Sensing technology has partially answered the questions of various muffled voices from corners of the world on this issue of Climate change and Global Warming.

INDO RUSSIAN WORKSHOP - A REPORT

Indo Russian workshop on Regional Climate change was jointly organised by Nansen Environmental Reseach Centre -India and Nansen International Environmental Remote Sensing Centre -Russia ON 8TH and 9th October 2009. The goal of the workshop was to catalyse new initiatives in India and Russia to advance Regional Climate change assessment studies, data and information sharing and to strengthen the scientific proofs on climate change. The scientific community for this workshop included Prof.P.V.Joseph (CUSAT,COCHIN), Dr.M.Ramalingam, Director IRS, AnnaUniversity, Dr.M.Ravichandran Head- Ocean modelling and observation group-INCOIS and many other technocrats from all over the world. There were six sessions, with each session preside over by various Scientists expertised in this domain. The first session presided over by Prof. Ola. M. Johannessen, Nansen center-Norway, discussed the apposite results on 'Global And Arctic Climate Change And teleconnection', second session explained the consolidated analysis on 'Green Land Ice Sheet ,Arctic Sea Ice, Arctic and Himalayan Glaciers'and this session was presided over by Prof. J. Srinivasan, Divecha Centre for Climate Change, IISC-Bangalore. The third and fourth sessions received presentations from keynote speakers on Regional Climate Models in INDIA and RUSSIA. The final session focussed on 'Satellite Remote Sensing of Environment and Climate'. Here the scientists expatiated the dire need of satellite information for monitoring climate change issues. In compedience the Workshop briefed the impact of Arctic sea ice melting on Himalayan glaciers. The objective of my poster titled "REGIONAL CLIMATE MODELLING AND ADAPTATION ISSUES" was to validate the results of Sea Surface Temperature and rainfall rates obtained from satellite imageries with the aid of in-situ buoy data and ground truth measurements of rainfall rates from IMD. Further, the results were used to create a Regional Climate Model for Sea Surface Temperature in Bay of bengal. The parameters used were effective surface reflectance, watervapour colum (ascending), back scattering co-efficient, Aerosol absorption optical depth. The results reinforced the impact of warming up of sea surface on Indian Monsoon. The workshop also received various posters from scientists-SAC, Ahmedabad, Research scholars, Nansen centre-Kochin. The workshop proved to be a blend of multiple technologies to monitor the modern meteorological challenges and it was a way out to various mysteries which scientists are trying to clobber at.



THE LITTLE DEVIL WITH THE GMS MAP WORLD FORUM-2009 EXPERIENCE

Mohammed Tausif Meeran.H
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Map World Forum was one of the unique experiences in my lifetime. Apart from the juicy and mind-blowing food at the premises we too learnt a lot of things from the trained professionals and the entrepreneur community. The beginning of this was my pocket!!!! Not the pocket actually!!!! But the mobile phone (The Little Devil) inside my pocket. Before going to the core part of my project I would like to summarize on the overall experience at the forum. We started our first day forum with the speech from Mr. Hamid Ansari, The Vice President of India which was followed by the speech from Mr. Kapil Sibal, Union Minister for Science and Technology & Earth Sciences. Apart from the formal speeches the one we were very impressed about was the speech from Dr. Jane Goodall who talked about saving chimpanzees by the use of GIS!!!

Dr. Goodall, the primatologist and a tireless campaigner for both world peace and Environmental protection devoted her presentation to the relationship between her conservation work and information technology, especially spatial technology. As the closest living primate to Homo Sapiens, her work is based on the premise that an understanding of chimps would lead to improved understanding of mankind itself. The relationship with geography began some 14 years ago, when Dr. Goodall began to realize the threat posed by deforestation of the regions around Gombé to the lives of her chimps.

Apart from our group on GMS (!?), there were two groups from our class and one group from our seniors class who were presenting on different topics the next day. Our poster attracted many foreign and domestic people as everyone's belonging were there in the poster: A MOBILE PHONE!!!! The most important person among them was Jim Barry, Program Manager, ESRI Developer Network (EDN), and ESRI who became an inmate friend of ours when the conference was over. With these few words let's see what the poster was all about.

GIS AND ITS CONSTRAINTS

GIS – Geographic Information System is quite a colossal term these days. With its copious application, everyone knows how powerful this tool is. GIS can be used, almost in all the fields from Urban Planning to Disease Mapping. Inherently, the cost involved in developing the GIS software is also inconceivable. Updation and maintenance requires equal whack as that of the creation. But, updation necessitate extensive source of real time information which in turn calls for huge man power. At

this circumstance, we have come up with a newer technology for easy updation of these databases, by using the easily accessible, ubiquitous electronic device, the Mobile Phones!

Data is the core and emphasis of GIS. Conventional methods cannot satisfy the need of GIS development with the disadvantages such as low digital degree, high cost and long time consumption. In this intricate situation, GPS with its renowned capabilities such as 3D Positioning, acquiring the velocity and time information about any point on earth with high precision can be well used as a source for data collection. Besides all these fascinating capabilities, even GPS owes some disadvantages due to its high cost, complicated integration with GIS and could be used only by the professionals. So, the issue is to use a device to compensate all these disadvantages. A straightforward solution is to employ GPS enabled mobile phones. In the last two decades, World has seen a tremendous development in Mobile phones. Today we find every Tom, Dick and Harry using an ordinary cell phone. So, with this perception, it can be assertively assumed that by yet another decade, we can find even a normal commuter using a GPS enabled mobile phone. Survey says that GPS enabled Mobile phone shipments will increase from 109.6 million units in 2006 to 444 million units by 2011. The increase is attributed to a mandate created by US Government for enhanced 911 capabilities on cellular and voice over IP telephone calls.

How to incorporate Mobile Phones with GIS database?

GMS

Geographic Message Services (GMS) is a new style of sending messages similar to SMS (Short Message Services) and MMS (Multimedia Message Services). Besides sending Text and Pictures, Latitude and Longitude of the location is automatically incorporated from the integrated GPS in mobile phones. The necessary information which has to be updated to the GIS database will be collected in the form of text and images by common public. Then, this information will be sent as GMS packets to the nearby service provider's Base station. Subsequently, it will be transmitted to the Master Station where the GMS packets will be identified and extracted.

From here it will be dispatched to a common server which is integrated with the GIS database.

INTEGRATION OF GIS

Once the data is received in the server an automated program will display the new message and wait for the approval of the GIS analyst. When approved, it will be integrated to the database automatically or manually depending on the data source.

APPLICATIONS

We have analyzed the possible use of this technology to meet the pressing demands of Chennai Metropolitan's Second City Plan, where there is an expectation for rapid vertical growth as against growth in urban sprawl. In that perspective, we can use this technology in the following fields constructively. This technology can be applied in umpteen numbers of applications such as Electricity Board, Census Department, Roadways, Waste Management, Drainage Networks, Map Updation, Queries, etc.

CONCLUSION

"The significant problems we have cannot be solved at the same level of thinking with which we created them." - Albert Einstein.

This is what even we want to stress upon. If this technology could be implemented, we can very well assure that even Indians could lead a sophisticated life. The Government will no more face any crisis in handling the public related works.

The link for the paper:

http://www.gisdevelopment.net/technology/survey/mwf09_aniruth.htm



Poster presented at MapWorld Forum '09
by Anirudh J., Mohammed Tausif Meeran H., Rohini S.S



Our student participants with Mr. Jim Barry, Program
Manager ESRI Developer Network (EDN) at
MapWorldForum '09, Hyderabad



GEOVISION

CELESTIA '09

Reaching beyond the horizon...

On October 23rd, 2009, the staff and students of Institute of Remote Sensing (IRS), Anna University, Chennai, gathered for CELESTIA '09, an intra-college symposium hosted by the Society of Geoinformatics Engineers (SGE). The grand symposium was inaugurated by **Prof.Dr.S.Mohan**, Director, National Institute of Technical Teacher's Training and Research, Chennai amidst the august presence of **Dr.S.Shanmugavel**, Registrar, Anna University, **Dr. Ramalingam**, Director, IRS, **Dr. Srinivasa Raju**, President, SGE, Dr. Jayalakshmi, Treasurer, SGE, and the staff and students of IRS. The inauguration was marked by the Welcome Address by the Director, IRS. This was followed by an awe-inspiring Presidential Address by the Chief Guest. He spoke on the advancements in the field of Geomatics and encouraged students to achieve in this field. There was a brief tea break thereafter.

The next in line for the day was an industrial presentation by the **Mr. Sunil Verma**, Project Manager, AIMIL Ltd., Chennai. He gave an exhaustive presentation on the recent Trimble products that are introduced in the market, right from the principles on which they were designed through their advantages. The audience that comprised of the staff and students from various departments of the college hence got an insight into not just the Trimble products but also the basic principles underlying the various field survey instruments.

The industrial presentation was followed by the paper presentation event. This event comprised of two phases, judged by **Dr. Ravindran**, Scientist, IRS and **Dr. Thirumalai Vasan**, Scientist, IRS. A wide range of interesting topics, pertaining to the field of Geomatics, were presented by students from several departments of the college. Assessing the solar potential, Hyperspectral radiometry, Seismic zonation, Traffic study, Vehicle tracking, Crime analysis, Land degradation, Lidargrammetry were some of the remarkable topics that were covered in the paper presentation session. The pre lunch session (phase I) was marked by 5 presentations, and the remaining presentations were done in the post-lunch session. The judges questioned students at the end of each of their presentations, in the rebuttal round, which led to more exchange of interesting ideas and knowledge sharing.

The poster presentation was next conducted. **Dr. Vidya**, Assistant Professor, IRS, judged the event. Crime simulation, Vehicle Tracking and GPS principles were some of the topics that were covered in this session by the students. Dr.Vidya had a detailed discussion with the students who presented the posters, which again led to the exchange of ideas to a great extent.

After the exhaustive round of presentations, there were lighter events that kept the audience enthralled. Technical Quiz, Visual Interpretation and General Quiz were conducted; there was an over-whelming response for participation in these events.

The event was finally concluded with the prize distribution ceremony, where cash prizes were given by Dr. Ramalingam to the glorious winners of the day, in the several events that were conducted.

PRIZE WINNERS

PAPER PRESENTATION

I PRIZE

WINNERS:

Jayakrishnan.V, Petchiyappan.M
B.E. Geoinformatics 5th Sem

TOPIC: Assessing the solar potential for the Guindy Campus of Anna University using geospatial technologies.

II PRIZE

WINNERS:

Gayathri B, Subha Dharani. S
B.E. Geoinformatics 3rd Sem

TOPIC: Hyperspectral Radiometry to assess iron oxide content in soils and minerals.

III PRIZE

WINNERS:

Monica.V, Nachammai.V.P
B.E. Geoinformatics 5th Sem

TOPIC: Traffic study of individual travel behaviour in Chennai City.

POSTER PRESENTATION

I PRIZE

WINNER: Jayashree.S

B.E. Geoinformatics 5th Sem

TOPIC: Crime Simulation using Cellular Automata and GIS