

Narrative Report on

Summer School on Geo-processing tools and technologies in citizen science

The invention and use of technologies has increased rapidly over the last few decades, which has changed the way to analyze geo information. With the advent of concept of open data and open science, it is necessary to collaborate with general public in scientific work in order to solve complex problems. Thus, citizen science aims to involve public in scientific research and contribute to global investigations followed by their solution. However, there are only few efforts, which has emphasized on issues related to citizen science. Among such attempts are ISPRS's summer school on geo-processing tools and technologies in citizen science, which aimed to promote the use of geo-processing tools to increase citizen's participation and improve the quality of the collected data. Through series of lecture and practical session, the summer school was eye opener for me who does not have any technical knowledge on such issues. Personally, I acquired vast knowledge and feel confident to use such geo processing tools in social program and projects. My few observation and learning of each session has been briefly described in table below:

S.no	Session	Learning and practical implications
Day 1 - 30/Oct/2017		
1	Role of Citizen Science in Governance and Disaster	<ul style="list-style-type: none"> • Understood concept of Open Data – Open Government and Citizen participation at local, regional and country wide projects
2	Citizen Science for Observing and Understanding the Earth	<ul style="list-style-type: none"> • Learned underlying trends, concept and historical perspective of citizen science • Gained knowledge in current activities in the area of Citizen Science online and offline: a typology of domains, technology, and participation including Earth Observation systems integration
3	Practical: Mobile Based Data Collection using Open Source Tools	<ul style="list-style-type: none"> • Learned about ODK collect and how to create online forms in QGIS • Designed questionnaires based on several indicators to collect data for the field visit on following day
Day 2 – 31/Oct/2017		
4	Leveraging OSGeo Ecosystem for Citizen Science	<ul style="list-style-type: none"> • Learned about GEO ecosystem and how to aware people about environment implication and prepare them from any uncertain natural disasters
5	Role of Geospatial Technology in Citizen Science	<ul style="list-style-type: none"> • Learned about correlation between Remote Sensing, GIS, GNSS and information technology • Understood the significance of citizen science in collecting data related to geo spatial during emergencies such as earthquake and forest fires • Application of citizen science and geo information data for problem identification, assessment and policy action
6	Enabling Citizen Science using FOSS4G	<ul style="list-style-type: none"> • Learned the concept about free and open source software • Understood several FOSS4G Software applicable in Citizen Science at user interface, application server and database level • Learned about GEO citizen science work flow from data

S.no	Session	Learning and practical implications
		collection to analysis
7	Practical: Hand-on Mobile Based Data Collection using Open Source Tools	<ul style="list-style-type: none"> • Gained hands on knowledge on usage of android based Mobile phones to collect data on ODK platform • Visited Mussoirie to Collect data on different point of interest infrastructures such as schools, public toilets, restaurants, bus stops and many more that could be helpful in providing exact information to tourist in Mussoirie
Day 3 – 1/Nov/2017		
8	Citizen Science Data Collection and Management	<ul style="list-style-type: none"> • Acquired knowledge on how to involve public in data collection using simple technologies such as mobile phone and internet
9	Citizen Science Data Validation and Analysis	<ul style="list-style-type: none"> • Learned different methods to ensure internal and external quality of the data • Gained knowledge on different vector data analysis strategies
10	ISRO's Initiatives in Citizen Science	<ul style="list-style-type: none"> • Understood different initiatives of ISRO's in several south Asian countries including outer space • Familiarize with several initiatives such as humanitarian open street maps, road condition mapping, WGSDI and ecosystem monitoring etc
11	Practical: Geo-processing and Visualization of Collected Data	<ul style="list-style-type: none"> • Learned to create own project in own server • Learned how to use real time plugin and connect the collected data to server using QGIS • Understood how to visualize and interpret data for analysis
Day 4 – 2/Nov/2017		
12	Role of Citizen Science in Mitigating Natural Disasters	Understood how citizen science has contributed in mitigating forest fire and landslide in different parts of India
13	Bhuvan Platform for Citizen Science (Visualization and Analysis)	<ul style="list-style-type: none"> • Briefly understood the project being implemented under citizen science in Bhuvan, India. • Learned how historical data could be utilized in visualization and analysis of thematic datasets and helped in providing timely information related to forest fire, landslide and other disaster saving thousands of lives.
14	Group work for Pilot project	<ul style="list-style-type: none"> • Worked in group to visualize and analyze data related to different point of interests such as Schools, hospitals, restaurants, Public toilets, recreations parks, police station, shop, and library • Used several plugin such as real-time, open street maps in QGIS to develop different maps illustrating point of interest in Missouri • Used Pivot table and slicer for data visualization and analysis
Day 5 – 3/Nov/2017		
15	Role of Open Data in Citizen Science	<ul style="list-style-type: none"> • Learned about different components of citizen science • Understood how open data source has been used in humanitarian open street maps, road condition mapping, and ecosystem monitoring etc
16	Pilot Project Presentation	<ul style="list-style-type: none"> • Presented group pilot project and received feedbacks

In overall, the summer school was fruitful for me as it not only strengthened my academic knowledge but also exposed me for the first time to geo processing tools in citizen science which I have never experienced in professional and academic career of social science. Though, my future career is inclined toward food security, agriculture development and poverty reduction, it was unique platform to learn how geo science technology and citizen science can affect in agriculture development and poverty reduction. Particularly, historical data and ongoing land use trend could be helpful in better planning and policy in agriculture sector. Beside academic knowledge, the conference has furthermore helped me to expand and strengthen my professional network which I am sure will help in future endeavors.

Prepared by:

Diwakar KC

Lalitpur Nepal

Organized by:

Indian Institute of Remote Sensing,

Dehradun, Uttarakhand, India

Enclosed is the expenses record.

Expenses Detail to attend ISPRS Summer school on
Geo-processing tools and technologies in citizen science
at IIRS, Dehradun, Uttarakhand, India

S.no	Particulars	Cost (in INR)	Equivalent USD (1USD = 64.00 INR)	Documents of proof
1	Round-trip airfare from Kathmandu to NewDelhi	22075.40	344.93	1) Invoice 2) Round trip Boarding Pass
2	Bus fare from New Delhi to Dehradun	675.00	10.55	3) Ticket and Invoice
3	Registration fee to participate in summer school	5000.00	78.13	4) Payment Receipt 5) Participation Certificate
4	Bus fare from Dehradun to New Delhi	750.00	11.72	6) Ticket and Invoice
	Total	28500.40	445.32	