

Outreach of geological and geographical sciences using social media in combination with TV programs

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Social media can be used together with classic media such as TV, radio, and newspapers. Such an approach may be effective for outreach of geological and geographical sciences. This paper introduces tweets related to a geographical TV program and indicates advantages of social media combined with classic media.

Keywords: Social media, TV program, outreach

Classification of the usage of social media in the Geoscience field

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This document classifies presentations in social media session in JpGU of past five years.

Keywords: Social Media, Type of the Usage, Geoscience field

データの個数 / 分類 行ラベル	列ラベル					総計
	2011	2012	2013	2014	2015	
専門家からのアウトリーチ	3	5	6	1	3	18
研究者コミュニティの活性化	3	3		1	1	8
チーム内情報共有・コミュニケーション	2		1	2	1	6
ソーシャルメディアによるセンシング	1	1	1	1	1	5
その他	1			3		4
一般コミュニティの支援			1	2		3
防災	2	1				3
教育手法・実践	1	1		1		3
総計	13	11	9	11	6	50

Renaissance of the "TOMOBIKI Night!!" social streaming program for geospatial information science and technology

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"TOMOBIKI Night!!" is a streaming program which was originally broadcasted in 2010–2012. The main topic of the program was archaeology and geographical information systems (GIS). The program was broadcasted from Tokyo in every other *tomobiki* day of the Japanese lunar calendar system (approximately once in six days). The duration of each program was one hour in average, and the contents included talk with guests, report of academic/social events, and show of gadgets such as latest applications and instruments. Ustream was used for the streaming platform, and its social streaming facility effectively bridged two anchors and audience. The series halted at the 30th program in July 2012, due to the overwhelmingly busy schedule of the anchors.

As one of the anchors moved to Kyoto in 2014, the "TOMOBIKI Night!!" Renaissance Project was launched in the Kansai area (including Osaka, Kyoto, and Nara). During the halt, social media have settled in academia. Streaming videos are taken in scholarly meetings and lectures, and an increasing number of streaming-oriented scholarly meetings, such as the Niconico Gakkai β[2] and One-Hundred-Research-Show series, have been convened. The research interests of the anchors have been widened towards geography and geospatial information sciences. It is also noted that rescue operations in the Great East Japan Earthquake in 2011 enhanced collaborations between researchers, industries, and governmental sectors by means of GIS. Following these trends, the new series of "TOMOBIKI Night!!" deal with a wider range of topics associated with geospatial information science and technology. The first program of the new series was broadcasted in April 2015. After then, one-hour live session is broadcasted from either Nara or Kyoto once in several *tomobiki* days [3]. The structure of the program follows the old series and comprises talk with guests, gadget show, and event news. In addition, an associated streaming program "TOMOBIKI-ja-Night!! GeoGeoWest" [4] is broadcasted from Aoyama Gakuin University in the suburb of Tokyo every Monday during a semester. Streaming platform can be chosen from Ustream, Periscope, and YouTube Live now. This paper reviews the first year of the Renaissance Project and discusses the current status and future directions of social streaming programs in the context of drastically transforming scholarly communications.

[1] Kondo, Y., Ako, T. (2012) "TOMOBIKI Night!!" a Japanese Archaeo-GIS Ustream programme.

Demonstration presented at the 40th annual conference of Computer Applications and Quantitative Methods in Archaeology (CAA). held at University of Southampton, 26–29 March 2012.

<https://www.ocs.soton.ac.uk/index.php/CAA/2012/paper/view/356> (Accessed 17 February 2016)

[2] Niconico Gakkai βChannel <http://ch.nicovideo.jp/niconicogakkai> (Accessed 17 February 2016)

[3] TOMOBIKI Night!! <https://www.youtube.com/channel/UCrGyVZYqz6l0Qwm-jQg4bVw?spfreload=10> (Accessed 18 February 2016)

[4] AGU GSC on Air <https://www.youtube.com/channel/UCrHdfBuNA3qyfLNAPyv3T8w> (Accessed 17 February 2016)

Keywords: social streaming, geospatial information, scholarly communication



Operation of the academic community with the researchmap

Case study of the Japan Consortium for Arctic Environmental Research (JCAR)

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Japan Consortium for Arctic Environmental Research (JCAR) was established by arctic environmental researchers in Japan, and it is a nationwide network-based organization for promoting arctic environmental research. The number of member is about 400 people, as the same as the medium-sized academic community. It has already become difficult to take the communication among members, and JCAR office was seeking a new communication tool as a network type organization. We have compared various tools, and selected "researchmap". We create a JCAR community on the researchmap on October 2014, and we have operated it. By using researchmap, it has succeeded in providing the following functions.

- Deliver news and information via e-mail without mailing list
- Electronic voting
- File sharing
- JCAR member information sharing

In this presentation, we want to introduce the case study of the academic community using the researchmap, and share to other academic community.

Keywords: Social Network Service, Communication, researchmap

Social Media GIS to Support the Utilization of Disaster Information for Disaster Reduction Measures

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This study aims to design and develop a social media GIS for reducing the effects of natural disasters in normal times through to disaster outbreak times. This is achieved by designing and developing a social media GIS that integrates a Web-GIS with an SNS and Twitter, and includes a function for classifying submitted information. The social media GIS enables disaster information provided by local residents and governments to be mashed up on a GIS base map, and for the information to be classified and provided to support the utilization of the information by local residents. Further, the present study also aims to operate the social media GIS and evaluate the operation. During normal times when there is no disaster, disaster information is collected via the SNS, and local disaster information is accumulated. Through this, the system aims to improve the disaster prevention awareness of local residents. Further, during disaster outbreaks when there is an excess of information, if a communications environment (electricity, internet, information terminals, etc.) can be secured, the system aims to support evacuation activities by automatically classifying disaster information, promptly displaying it on the digital map of the Web-GIS, and ensuring its noticeability. Through having people use the system routinely and get used to it in normal times in this manner, the possibility that the system can be effectively used with no problem as a means for reducing the effects of natural disasters even in tense situations during disaster outbreaks can be anticipated.

The conclusions of this study are summarized in the following three points.

- (1) Social media GIS, an information system which integrates Web-GIS, SNS and Twitter in addition to an information classification function, a button function and a ranking function into a single system, was developed. This made it propose an information utilization system based on the assumption of disaster outbreak times when information overload happens as well as normal times. The system unambiguously has the function for full-screen display of digital map, and the button function and ranking function of disaster information.
- (2) The social media GIS was operated for fifty local residents who are more than 18 years old for eight weeks in Mitaka City, Tokyo. Although about 32% of the users were in their forties, about 30% were aged fifties, and more than 10% of the users were in their twenties, thirties and sixties or more.
- (3) The system was evaluated based on the results of an access survey using log data during operation and an analysis of the submitted information. The access survey showed that 260 pieces of disaster information were distributed throughout the whole city of Mitaka. Among the disaster information, danger-related information occupied 20%, safety-related information occupied 68%, and other information occupied 12%.

Keywords: Social Media GIS, Web-GIS, SNS, Twitter, Disaster Reduction, Support for Information Utilization

Approach to build collective intelligence using SNS in earth science

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The possibility of the construction of collective intelligence using the Internet is recently discussing, however the approach to collective intelligence in earth science is rear. I will show the case study of the attempt in the North Ibaraki Geopark, and bring up real problems.

Keywords: collective intelligence, Facebook, geopark

Effective information transmission of activity in the North Ibaraki Geopark using SNS

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The 285 guides(interpreters) are active in the North Ibaraki Geopark. They show and discuss their activity in own group in the Facebook. The system for transmission of the information of their activity using facebook page was constructed. We will present the results and effects of this system.

Keywords: SNS, North Ibaraki Geopark, Facebook

Use of social media in Geopark

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We report the use of social media in Geopark.

Keywords: Geopark, Social Media, Facebook, Today's Incident, Landscape Photography

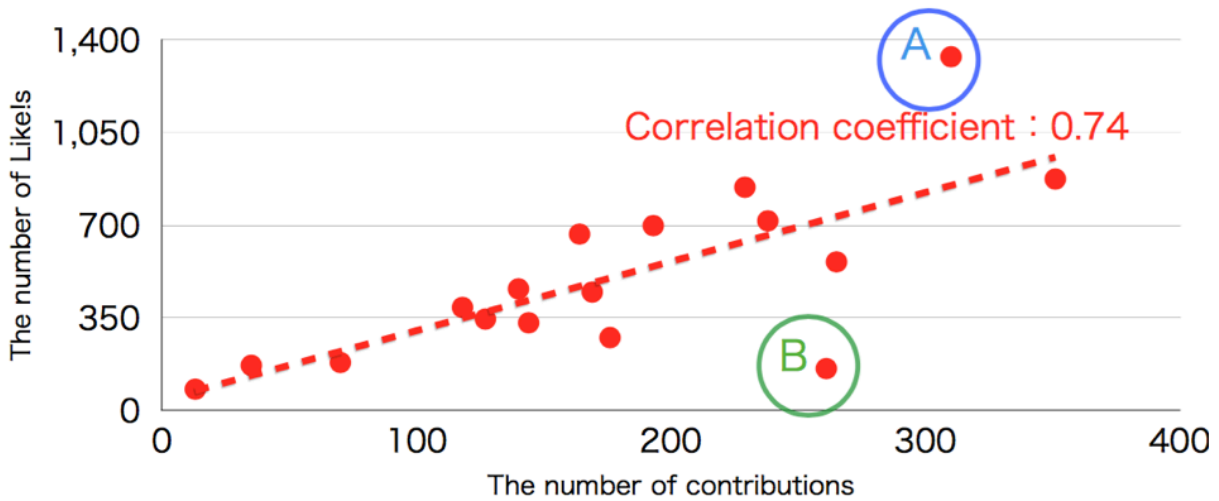


図2. 投稿数といいね！の数の相関

Figure.2 Correlation of Contribution and Like!

The number of contributions and the number of Like!s strong correlation.

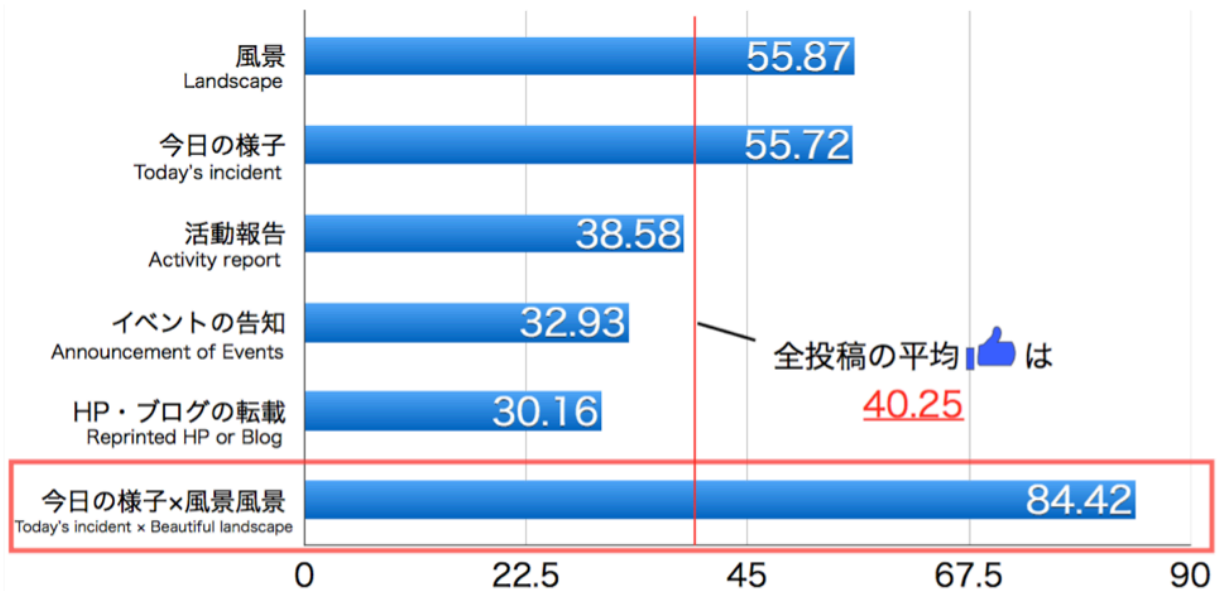


図5. カテゴリごとのいいね！の平均数

Figure.5 The average of number of Likes by Category

There is a lot of Like! in the contributions of beautiful landscape picture and today's incident. In addition, it becomes a lot by those combination.

Portal Site for Activities

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Various types of activities are available at the San'in Kaigan UNESCO Global Geopark. The current problem is that visitors often stress out when they have to visit different websites in search of necessary information before choosing what they want to do as an activity. Geo-canoe is one example. There are some geo-canoe businesses in the geopark and they are probably rivals. But I think one can discover one's own strength by getting to know the others. By introducing each other on each website effectively, We can provide useful information with visitors and expect the boost of economic effects over the entire area. Aside from geo-canoe, the San'in Kaigan Geopark should prepare many options of different activities throughout the year to meet visitor's satisfaction. And the council has created a portal site, allowing visitors to search in a shorter time. CMS function was introduced. The system is compatible with smartphones for practical use.

Keywords: activity, CMS function, compatible with smartphone, network, homepage

Citizen science of aurora

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Human beings have observed unusual variations in the heaven and recorded them through the ages, and people in the present day share a large amount of the beautiful digital images via internet. The purpose of this study is to utilize these social assets for natural science. More specifically, we conduct 1) archiving the old records about aurora phenomena in historical writings, and 2) a citizen science of aurora monitoring over the world. In this presentation we report our collaborative challenge among the humanity, natural science, and citizen science.

I felt it, did you? Sensor network and Social media can collaborate for disaster mitigation

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Kim et al. (2015) has developed a community based MEMS sensor network in Yokohama. The project aims to distribute the sensors every several hundreds meters in the area to provide information more closely linked to community's life. The network consists of sensor unit utilizing 12 bit MEMS sensor and Raspberry pi, which detects strong motion and process the data. In this study, we linked the sensor network with social media to share the triggering information among the community for future disaster mitigation.

In the sensor network, once the strong motion is detected, each sensor unit sends the triggering information to the main server. After all the information is collected, the server checks the status of the sensor unit which didn't detect the strong motion. As long as it was not break down, the 'not triggered' unit will respond to the server to inform "I am safe" means it is working but didn't detected a strong motion. Then the information is share via social media among the community. As one can imagine, 'not triggering' is very important first order safety confirmation as well as 'triggering'.

For the strong motion detection, we utilized the artificial neural network (ANN) as the pattern recognition algorithm. ANN works well under the low signal to noise ratio environment operation. However, noises which have similar pattern of strong motion signal still make false alarm. To overcome the issue, it might be helpful archiving both user's and sensor unit's triggering information in the system, and set up the site specific detection algorithm.

Keywords: MEMS accelerometer, Sensor network, Twitter, Facebook, Raspberry Pi, earthquake