Image Analysis of Night Scape using Lyrics

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Abstract— Night scape has a beauty that attracts people. In recent years, due to the spread of cameras and SNS, there are many new trends and new popular spots. As a byproduct, this seems to attract tourist. In this research, the characteristics of the night scape were analyzed using the photos and post contents from SNS. As a result, by the analysis to evaluate a part of the values, the examples: the perseverance, the painfulness and the merriment are appeared of the night scape.

Keywords— Image analysis, Night scape, SNS

I. INTRODUCTION

Night scape attracts a lot of people regardless of race, gender, generation. It is a visual stimulus that brings healing to modern people who have various stresses in modern society. The night scape has an ability to allow one to collect themselves. In recent years, popularization of smartphones and digitization of cameras has progressed, giving many people easy access to cameras that are now high performance. At the same time, information exchange platforms of SNS (social network service) have become popular. It became possible to "share" one's information or "moments" with unspecified numbers of people. SNS leads trends and when people shoot a night scape with their camera and post it to SNS the post receives a lot of attention and that location becomes a popular night scenic spot. That popular night scenic spot is then sought after by tourists which leads to increased regional revitalization. It is indispensable to focus attention on people's consciousness to find a characteristic night scape.

Fig. 1 Night scape

II. PURPOSE AND METHOD

In this research, we aim to grasp what kind of emotion people feel from a night view. This insight into emotion should become a clue for the characteristics of an optimal night view.

For the research method, we collected lyrics from songs related to nightscape photos and night scenes.

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After that, analyze classification and characteristics of nightscape photograph and analyze the lyrics.

Next, we retrieve words obtained by analysis of collected lyrics and classify them.

Finally, from the relationship between the analysis result of the night scape photograph and the words obtained by the lyrics analysis, we analyze the image of the nightscape picture and make conclusions.

III. HOW TO COLLECT PICTURES

Flickr is a photo posting site from overseas boasting the most photos posted in the world. In Flickr, registered users can freely classify photos in Flickr with keywords called "tags". In addition, each user has a function to create a "set" in which thumbnails of a plurality of photos are arranged in the same title on their respective top page. The sets here are more flexible than the traditional file sorting method, it is possible to put one picture in multiple sets or not in any set. In this way, it is easy to classify and search pictures, as the relationship between pictures and words has an SNS-like aspect.

Furthermore, Flickr has released its own API (Application Programming Interface), allowing applications to "mash up" with SNS.

In this research, we selected Flickr as a photo collection site.

Fig. 2 Examples of pictures collected using Flicker

IV. COLLECTING NIGHT SCAPE PICTURES

In this research, we analyzed images of night scenery searching photos with "night view" tags. However, there are enormous amounts of photographs taken from countless nightscape spots making it difficult to analyze all of them. Therefore, in this research, we selected nightscape spots and targeted nightscape photographs taken within them.

Night scene spots were targeted at 26 places with reference to the website. After that, we collected photographs of the target night scenic spots and sorted out pictures other than night

scenes. Then, six target night spot spots where the ratio of the total number of searches and night view photos exceeded 30% were taken as the target of this study.

TABLE I
PERCENTAGE OF TARGET SPOT AND NIGHT VIEW PHOTO

place	percentage(%)
Mount Hiei driveway	7.6
Mount Oiwa view place	0.0
Mount Mandoro observatory	100.0
Abeno harukasu	13.8
Seaside cosmos	23.1
Umeda sky building	11.2
Orix Honmachi building	15.2
Mount Satsuki driveway	-
Izumiotsu parking area	56.1
Jusou Pass observatory	-
Kanku outlook hall	7.6
Hannan sky town	50.0
Mount Maya	33.6
Rokkou garden terrace	6.5
Mount Rokkou observatory	-
Mount Nadamaru park	27.3
Maiko park	6.5
Kobe port tower	7.8
Venus village	37.8
Port Island north park	66.0
Itami sky park	4.1
Yamatedai north park	0.4
Awaji service area	5.9
Mount Wakakusa	2.2
Shigi Ikoma sky line	25.0
Saisyogamine view place	-

V. COLLECTION OF LYRICS

In this research, we use lyrics to analyze nightscape pictures. The lyrics to be used were for songs in which words related to night were included in lyrics out of a total of 280 songs by the ranking of sales each year from 1989 to 2016.

VI. ANALYSIS OF LYRICS

In this research, text mining was used for lyrics analysis. Text mining is a method for discovering useful information from sentences.

It uses a method of natural language processing to extract bits from sentences by dividing sentences into words and phrases and statistically analyzing the occurrence frequency of words and the relationship between words. Therefore, text mining is considered to be an effective means for realizing the objective of analyzing a large amount of text data efficiently and objectively.

It can be divided into parts that categorize sentences by natural language processing and statistical analysis of categorized data. Therefore, in order to implement it, software that executes natural language analysis to separate sentences into words and software to perform statistical analysis are required. In the case of text mining software, there is software capable of performing both of these functions, and software only capable of categorizing the former sentences.

In this research, we analyzed lyrics using "IBM SPSS Text Analytics for Surveys" which categorizes sentences.

For lyrics of extracted songs, we extracted words expressing night scenes and adjectives and adverbs that psychologically evaluate them. Examples are shown in Table 1 and Table 2.

TABLE
EXTRACTION OF NIGHT SCENERY AND PSYCHOLOGY

Night scape word	Psychological words
city	get over(norikoeru),miracle(kiseki),Painful(tsurai),etc…
light	To watch over(mimamoru),To succeed(setsunaku),etc…
sky	happiness(siawase),break down(kowasu),To die(kareru),etc…
night sky	Important thing(taisetsunamono),Goodbye(sayonara)

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VII. EVALUATION OF NIGHT SCAPE PHOTOS THROUGH LYRICS

In this study, we have grasped the image of the night view photograph from the relationship between the constituent elements and lyrics expressing the psychology associated with the extracted night view photo. Here, the constituent elements of night scenes are taken out, and words of psychology evaluation are arranged in parallel for each.

VIII. RESULTS AND DISCUSSION

Analysis of nightscape photos and lyrics revealed that various emotions can be obtained from the night view. The results found that night scenery attracts people with its beauty, but also that a possibility that simply feeling that it is beautiful is only part of the surface layer. Table 2 and Fig. 3, and Table 3 and Fig. 4 correspond to each other. Starting with Table 2 and Fig. 3, it can be expressed that "a hardship must be overcome". With Table 3 and Fig. 4, it can be expressed as "I hope to focus on important things". From these analyzes and considerations, it turned out that people have various emotions, regardless of their consciousness, when looking at night views. There was also a tendency that positive and negative emotions coexisted with the photographs targeted this time. These provide suggestions on how to draw out the charm of the night view attracting people.

Fig. 3 Examples of pictures collected using Flicker

Fig. 4 Examples of pictures collected using Flicker

IX. CONCLUSION

In this research, we tried grasping emotions and images obtained from night scenes using night view photos and lyrics. As a result, we think that we found one evaluation method of a characteristic night time landscape. Moreover, it was revealed that various emotions are obtained from the space constituent elements of night views. From this result, I think that we could grasp a part of the charm of the night view.

I think that discovering the attractiveness of night views using new indicators and methods will be significant in the future nightscape analysis. Moreover, we think that this could lead to the possibility of contributing to the creation of a characteristic night view.

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