

Landscape analysis of daimyo garden using photograph information

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In recent years, social media in the information technology have been developed remarkably. The scenes at sightseeing are photographed, and the photos are accumulated as the personal spatio-temporal information in a non-structured state on the Internet. In this study, the authors analyze the landscape phenomenon by using personal photographs, the photos are accumulated on the Internet in daimyo gardens.

Specifically, they take photograph images and spatio-temporal information on site and they pay their attention to the both sides of the space and time, and analyze the data on using GIS. At first, they choose the case study area from daimyo gardens where many tourists visit at present. Then, they pay their attention to the flickr is a photograph community site, and they make a photograph information database and grasp the scene phenomenon by using it.

Among other things, the three famous gardens in Japan are Kairakuen, Kenrokuen, and Korakuen. And Riturin-park is a beautiful garden as well as the three famous gardens. In addition, there are sightseeing spots that many people visit at present. Then, they collected spatio-temporal information and photograph images taken by the visitors in the four gardens by using the flickr API. As a result, Kenrokuen was selected as the case study garden for analysis.

At first, they utilize the Exif information contained in the photographic image data. This metadata is the information of the camera itself, and various information including the F-number and the focus distance are recorded with the positioning data. The Exif information is the index recorded at the time of the photography. In this study, the authors grasp visual characteristics of Kenrokuen by using the focus distance and a photography direction.

Based on the positional information, they plotted the focus distance on GIS with conversion into the 35mm film camera. As a result, they were able to grasp the characteristic in the garden. First of all, around the Ume grove, an angle of view range is narrow and people look the fixed scenes. People watched the buds and the flowers of the plum closely. The second is around the Kotoji-torou area. This area is an angle of view range is wide, and photography is carried out of showed, using the plural focus distances.

Then, the analysis was focused on the photographic images, The photography position is not usually fixed and shows a variety of distribution for one object. Therefore, the authors grasp each viewpoint field by a directional distribution analysis. In this analysis, the point cloud are photography positions, so the standard deviation ellipse created by the analysis is regard as the photography viewpoint field.

First of all, they classify the photographs and create the photography viewpoint fields. As a result, it was revealed that the place, where plural viewpoints fields were overlapped, while people went round the gardens. So, in the sequence around the garden, the people do not watch an object in turn, and it is thought that the features were seen under the complicate influence. In addition, as they investigate the relationship between the subject and the viewpoint field individually, they found several characteristics from the positional relationship between the object and the shape of the standard deviation ellipse. So, they classified photography viewpoint field based on the analysis and grasped viewpoint field with four different characteristics. They grasp on landscape phenomenon in viewpoint field at minute time, and they were similar to expression of the camera work.

In this study, the authors grasped visual characteristics of the case study area by using the Exif information. In addition, they grasp each viewpoint field for every photography object, and was able to model the viewpoint field.

Keywords: daimyo garden, landscape, photograph information