

THE ART OF IMMERSION: THE HISTORY AND DEVELOPMENT OF PANORAMA

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Abstract

This paper involves emergence the term panorama, and history and development of panorama. The goals are to show that emergence of the term and history of panorama not in the end XX centuries apparently in the late 1700s. And described develop of panorama, as well as showed some pictures in view the panorama of Gyeongbokgung Palace in Seoul, South Korea.

Key words: 3D panorama, panoramic photography, panorama, panoramic camera, 3D features, virtual panorama

1. Introduction

Today, information technologies is developing every day, it can be say every hour. We can look these develop on the internet, on television, in the newspapers, but these new technologies tomorrow appear in our market. This is people need these technologies. In its queue, people need these technologies and they are required to involuntarily. As manufacturers improve, their equipment or they are producing new technologies. With these technologies and develop photo and video technology.

Previously, we could only see pictures on paper but, thanks to modern technology, such as digital equipment and modern smartphones, we can not only view and can shoot pictures and videos.

Simple pictures not interesting today. People want shoot the photo all around and this is not difficult for them. Thanks for new digital devises that everyone can shoot picture and video all around, and this called 3D panorama.

2. Theory of Panoramic photography.

Panoramic photography is a special genre of photography that involves retrieving the image stretched in length. These panoramic images can be collected from more than a dozen photos into one composite image. Panorama shooting photographer opens up entirely new possibilities for the realization of his creative ideas. Today, this type of photography is very popular for shooting landscapes, interiors of buildings or of significant architectural structures.



Figure 1. Court of Gyeongbokgung Palace in Seoul, South Korea

Above all, we must determine what constitutes a panoramic shot. When photographing a panoramic image is obtained, which gives the opportunity to see a viewing angle of 180 degrees or more. This panoramic photography allows the photographer to fit in a single shot is much more space than can be seen with the naked eye. After all, the usual photos, we can see only a small piece of the space occupied in the field of human angle less than 30 degrees

We will be able to help the pan for maximum integrity in the visual perception of the beautiful architectural buildings or landscape. Photo of a panorama can get a totally unique look and acquire a new meaning. The original panoramic images allow the viewer to look in all directions around the point of shooting. These images are high resolution and can print on virtually any format. Panorama shooting allows the photographer to manipulate perspective and demonstrate their ability to see the "big picture".



Figure 2. Forecourt of Gyeongbokgung Palace in Seoul, South Korea

I remind you that, panorama is not news. Previously, equipment was not as like today. If we look at the history of the panorama, first term "*panorama*" was use in 1796 year one of the patent. Owner was this patent Irish painter Robert barker. The Repertory of Art, which published the patent specification had note: "This invention has since been called Panorama".

History itself is a panoramic photography began in 1843, when the first panoramic camera was created. This camera was filming on flat photographic plates. However, due to the use of special lenses, it allows the photographer to get the viewing angle up to 150 degrees. Using a flat film at the same time led to a drop in the optical characteristics of lenses on the edges of the frame.



Figure 3. No. 3A Panorama Kodak Camera

Appointment of panoramic photography in our days can be quite varied. Panoramic photography is often used for the promotion of land and real estate, as well as obtaining review images towns or industrial plants. Panoramic images now are made from the top by means of aircraft, when flying at low speeds, which guarantees high image detail and perfect quality pictures. Modern panoramic photography allowed to change the approach to the promotion of real estate through the creation of spectacular shots of buildings that can be used as advertisement banners or images in catalogs.

3. Panoramas on film cameras.

The first panoramic shots appeared long before the 3D features. Photographers have long thought about the possibility of creating panoramic images with a wide viewing angle. When using film cameras, panorama made three of the most common ways.

- With Super Wide-Angle lens. This method was simple and accessible, but have a very limited capacity and heavily distorted picture.

- Normally, the camera was placed on a tripod with a swivel head. With step by step photos make a few frames, which are then glued together into a single panorama.

- With very expensive optical equipment, also rotating on its axis. This gets pretty long and quite realistic frame.

In those days, panoramic photography has been the lot of the elect, and the wide application not found because the show kind of thing was possible only in specially equipped premises, in museums or exhibitions.

With unique technology and 3D panoramic images, you can create three-dimensional models of towns, residential complexes and entire regions. Combining these images allows you to organize a real virtual tour, through which viewers can get acquainted with domestic interior room or a certain portion of the area. Photographs of interiors - also a popular field of application of panoramic photography. It is this survey provides an opportunity to show a wide space in its entirety, provided that the photographer simply have nowhere to move. Panoramic images create the effect of presence at the point of capture. In addition, the panoramic photography is widely used by builders and architects on the construction phase of the object. After using the review images they can easily

identify any deviations from the project and promptly correct execution of any given construction work.

4. Prospects for creating virtual panoramas

Over time, the panoramic shooting capability even more enhanced. This is due to the improvement of the software, allowing not just to combine images and make them very realistic. The information can be as much as necessary for a long time stored in electronic form, consider the fragments, to assemble them in a new way. In addition, when shooting panoramas fragments have different lighting that during the docking poses serious problems as distortion of space. All these nuances are easily solved with the help of modern computer programs.

This common use of virtual panoramas today ends and begins the region or single examples, or complete lack of attention. At the same time, this technology has a great potential. Let's look at its features.

1) Cheap three-dimensional world. Virtual Panorama - is a complete and absolutely photo-realistic three-dimensional world (only fixed inspection point). It is possible to add an infinite number of other information search and organize it. In particular, connecting the database. And also to create interactive interaction.

In practice, this results in a number of interesting features. Here are some of them:

Internet shops with the display of goods in the usual interior, walking on the trading function of the halls and the formation of the basket.

Virtual museums, with the possibility of exploring all the exhibits located in the halls. As well as search features, and any information collection processing.

Computer games in which the action takes place in a realistic worlds. Panoramas are best suited for creating quests, with the study of specific locations.

Virtual simulators that require immersion in reality. For example: the cabin of the aircraft, machinery, tanks, cutting the ship or submarine. The panorama can be inserted into three-dimensional objects to enhance the effect of presence.

Psychological tests and any other studies with similar requirements of realism.

Educational programs. The potential of such programs is much greater than that of the documentary film, the more that movies can include them as an integral part, and the panorama is much better suited for the organization of the material.

2) Photo fixation. There are many areas where accurate description of all the surrounding space is necessary and is standard procedure. Possibility of photographic images at the same time is an added bonus and very useful.

Places crimes, accidents, emergencies require a description by the regulations. Introduction to panoramic photography in daily practice would greatly improve the accuracy and clarity of these descriptions.

A similar situation is observed also in *archeology*. It is possible to fix the appearance of the area before excavation and in any of its stages.

For restorers need to know exactly how the object appeared in a given period of time. In this regard, regular photographic images of the state of cultural and historical sites looks quite justified procedure.

Very useful virtual view can be in the field of *architecture and construction*. The three-dimensional world, created based on a photograph preserves not only the appearance of things, but also allows you to accurately measure the distance between them and calculate their size. In the presence of scale, all the measurement data can be expressed in terms of the real world. This means that the virtual layout of an object can be inscribed in a real environment to see how it will look upon completion.

Interior design. If you are upgrading complex interiors are often easier to write the object layout in a real panorama of the interior, to see how it will look.

Power department: Ministry of Emergency Situations, Ministry of Internal Affairs, etc. For these institutions can be useful not only maps panoramas, but also panoramic photos (or videos), the interior of significant objects. Photography allows us not only to evaluate the plan or structure of the device that can provide the technical documentation or a three-dimensional model, and get an idea of the object in the most simple for perception.

3) Sequential virtual panorama. This genre, due to the lack of professional equipment for simultaneous recording, develops very slowly. However, due to the simple fact that most of the papers coming out now in the virtual form, he has a great future. Secure place inside the event, with the function of the circular viewing and studying the details - this possibility can not be ignored.

4) Panoramic video. A panorama video may be incorporated in an external file, a photo-textured part or the whole texture may consist of video sequences. In the latter case we speak of a panoramic video. The principal difference between the panoramic photos and videos there. Shoot the video for simultaneous recording systems. For docking and display panoramic movies using the same software as for the photos. Finally, panoramic video can also be viewed as a three-dimensional world, with all of its features.

4. Conclusion.

In this article we have tried to give an overview of only the obvious uses of panoramic photography. In fact, the areas in which it will be used much more, and some of them are now impossible to imagine. Nevertheless, we hope that the article will be useful to someone and come across it on the new thoughts. In this case, we will consider our mission accomplished.

5. References:

- [1]. O. Schreer, P. Kauff, T. Sikora. "3D video communication". Sec. 1.,pp 10-11
- [2]. O. Grau. Virtual Art: From Illusion to Immersion
- [3]. <http://www.photo.net>
- [4]. <http://nordicdreams.net.ru/articles/>