공연에 대한 고객감동 평가를 위한 감성데이터 활용 방안

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A Technical Planning for Emotion Evaluation of Art Performance using the Human Emotional Data

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[요   약]

최근, 스포츠, 디자인, 감성 과학 등의 분야 등에서 IoT 웨어러블 디바이스를 활용하는 여러 가지 연구들이 매우 활발하게 진행되고 있다. 시계, 스마트밴드, 안경 등 IoT 웨어러블 디바이스로부터 얻어지는 혈압, 심전도, 피부온도, 피부전도도 등과 같은 인간 생체 데이터는 의미있는 미래 응용들에 적용될 수 있다. 이러한 생체데이터는 인간의 감성변화와 물리적 상태등의 개인의 상태 정보를 얻을 수 있으며, 개인의 감성과 물리적 상태는 고객들의 가치있는 소비와 유관하게 연결되어 있기 때문에 이러한 방법은 현재 시점에서 그 중요성이 더해가고 있다. 그러므로, 개인적인 정보는 고객의 감성을 다루는 문화 산업의 마케팅에 효과적으로 활용될 수 있다. 본 연구에서는 예술과 기술 사이의 융합 연구의 전체적인 구조를 활용하기 위한 구현 스텝들을 보인다. 이러한 예술과 과학의 융합을 통해, 뮤지컬 산업의 창작과 마케팅의 효율화를 증대하고자 한다.

[Abstract]

Recently, several kinds of researches using IoT wearable devices are active in the field of sports, design, emotional sciences and so on. The human bio data such as blood pulse, ECG, SKT signal, and GSR Signal producing from IoT wearable devices such as Watch, Smart-band, Grass can adapt to the meaningful future applications. Using the human's emotional data and a physical status with variation and so on, we can individually get the personal status. Due to knowing the personal emotion or physical status is related and connected to the valuable wallet of customers, the approach is more important in nowadays. Therefore, the personal information can effectively adapt to the marketing of the culture industry, which deals with emotions of customers. The research shows implementation steps for explaining overall architecture of the convergence research between Art and Technologies.

Ⅰ. Introduction

We introduce research motivations and the focused problems of the article as follows[1, 2, 3, 4]. According to "2015 Musical Market Status", the musical market is continuously increasing for last 10 years. However, the positive statistics of musical market is only restricted from the musicals with foreign licences except for Korea musicals. Futhermore, the fundamental problem of the musical market is depending on Star Marketing based on famous idols instead of majored musical actors and actresses for achieving a lot of profits.

More and more seriously depending on the idol star system, the high actor's fee gradually became a big burden to the musical company in making musical performance. Thus, the completeness of the Art performance[10] is not important to the musical company due to the lack of the fund for making a good musical performance. The bad cycle fundamentally became a serious problem in Art market.

It is important that musical performance have to share the several emotions as a major factor in playing the musical performance since the current emotion of spectators is most important element for immersion to the musical scenarios itself, not a idol star's attraction. However, actually, the famous idol stars in musical is centered to the musical performance. Thus, the meaning of quality of musical performance is gradually decreased, and unfortunately, the importance of short-term box-office hit is gradually increased. This approach will cause the bad cycle and will prevent the right settlement of musical market in long-term periods.

The story of an opus and the emotion of the each character in the play or musical performance have to represent as expressionism, not a reality. For example, the musical performance can often express such an extreme angered emotion to mime, or sometime sing a song when the lover became in dying. Such a expressionism is a attraction of public Art performance and proper and meaningful convergence of elements from expressionism will finally maximize the quality of performance and Art.

Therefore, the capability or ability of actors and actresses is very important and differently measured according to the role in musical performance. Besides, the emotion of the performance is also measured in exact, objective and fair way, not ambiguous way like a current evaluation system, which only considers brief and subjective review contents and rather simple star-point evaluations of just a few customers. There is a restriction and a problem to evaluate the musical performance fairly. In the proposal, I focus on the problem.

We can find many kinds of IoT wearable devices in recent our environment such as Google glass, wearable watches, smart band for checking or monitoring our health, smart life, smart home and so on. These wearable devices can gradually guarantee the rapid, correct, useful and convenient access among our complex and big data which can reach heterogeneous data types using smaller embedded computers, so called as wearable devices. We will introduce recent popular several kinds of IoT devices as friendly pictures whoever accessible founded in the Google search engine in Figure 1 [9].

Figure 1. Recent IoT devices for several kinds of fields[9]

Through the IoT Wearable device[5, 6, 7, 8], current emotion of spectators is gathered to the databases in time goes on, then we rapidly extract the exact points of shocking scenes among songs or acting of actors and actresses. This information will give an guidance for objective emotional points of the musical performance whether the spectators be impressed in the which specific scene among all play part or not.

After analysis for the spectator's data, the actor can practice for improving as a better good actor and the musical company can exactly find proper actors of the role in objective way, not random selection. Therefore, we can finally make a more than good musical.

I will research as following steps: (1) gathering the emotions of spectators in time as IoT wearable devices such as Smart bands, or Smart Watches and so on, (2) analysis the emotional data, (3) making an evaluation system that shows right, objective, and reasonable results instead of subjective reviews or simple star-point evaluation in current.

And then, after researches with experiments, I will propose the effective results as follows: (1) Spectators will know the objective and exact level or attraction of the musical performance depends

on an average of emotional evaluations, (2) Actor or actress will know the objective status of own ability, for this, he or she can properly practice the physical or song training, (3) the musical company can casting the proper actor matched to the role character of musical performance, (4) using the objective statistics, musical company can use the next creation and administration & management.

I would like to research a novel method to improve the status of the musical or Art market fundamentally. For this, I will research the method systematically.

Ⅱ. Art & IoT Convergence Reserch Method and the Expectation

Now, several kinds of researches using IoT wearable devices are active in the field of sports, design, emotional sciences. The human bio data such as blood pulse, ECG, SKT signal, producing from IoT wearable devices such as Watch, Smart-band, Grass can adapt to the meaningful applications. Using the human's emotional data, we can individually get the personal status such as own emotional change in the time, a physical status, whether favor or not, whether interest or not, in this moment. Due to knowing the personal emotion or physical status is related and connected to the valuable wallet of customers, the approach is more important in nowadays. Therefore, the personal information can effectively adapt to the marketing of the culture industry, which deals with emotions of customers.
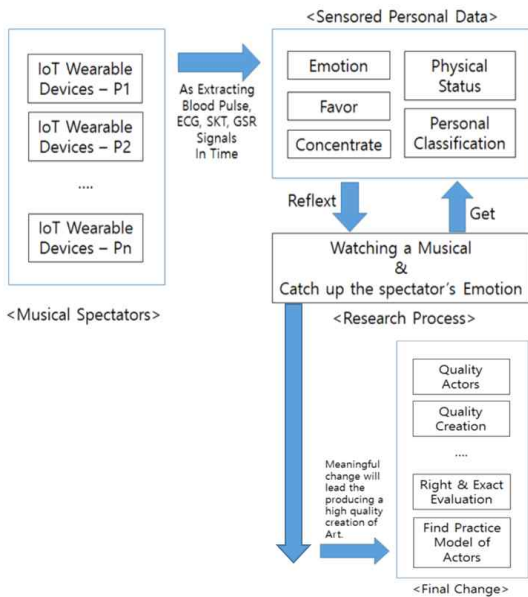

Figure 2. Overall Architecture of Convergence Research between Art and IT

The research presentation includes following steps for explaining overall architecture of Research Proposal in shown in Figure 2 in below.

Step 1. Measuring the spectator's emotions to countable vector values as experimental measurement based on emotional science using heterogeneous IoT sensors and so on.

Step 2. An objective recognition for differences among genres using emotional data gained from spectators attending arts for a media and a public performance.

Step 3. A systematic analysis and estimation for several kinds of components such as (1) a degree of favorable impression or for musics, stage equipments, screen changes, (2) a degree of satisfaction for acting ability of actors and actresses.

Step 4. Adapting the results of the systematic analysis to the creation process of Art → Creation of well qualitative public performance Art.

Step 5. Then, we can innovate the old casting methodology to the new one for selecting actors and actresses attracted by the spectators, and for casting them matched well to the characteristics of the musical or the play.

Futhermore, as analyzing actor preference of spectators using IoT emotional information, and then, with setting up the systematic strategies for estimating commercial value of actors, actually, we can regard "the actor' image" as "turn into a Brand". "The actor style turned into a Brand" will be used "a special model" as a target goal of the other upcoming brand-new actors to understand the spectator's opinion or trend. Finally, we can be used as a significant example for efficient physical practice methods of actors and actresses in real musical fields.

Ⅲ. Future Research Plans, Expectations, and Conclusion

Until now, the quality or the attraction of a musical performance can be only judged and evaluated as spectator's review contents and simple star-point grading in the web site after attending the Art performance. It is not enough exact evaluation, however, in unfortune, there was no other way to evaluate the quality or the attraction of the musical performance exactly. The old method is very ambiguous, therefore, we need to propose a new significant evaluation method to evaluate the influence of the Art and performance exactly.

Time goes on, nowadays, the catching and inferencing for the spectator's emotion in timely changing during running-time of the

performance is very important. Thus, I focused on the facts and motivated for this, I have a novel research plan for adapting the spectator's emotional body signals (ex, human bio information: blood pulse, ECG, SKT, GSR and so on) extracting with IoT devices to art and public performance such as musical domain and so on. If the proposed method are proved as a research paper with experiments, such a novel attempt can be propagated to the other genre of Art.

As the result of the systematic analysis, we can get a lot of major facts or information such as (1) whether spectators are now satisfying or boring in this moment or not, (2) how the spectator feels the singing of actors, changing stages, presentation ability of actors, and (3) what an attractive actress she is and so on. If we reflect this information to the creation process of Art, scene organization, stage effects, and the representation method of actors are meaningfully improved by spectator's unconscious emotion. Furthermore, we expect that the industry of public performance and Art will grow up eventually.

For setting up the effective marketing strategies in making a discrimination, such as new image making of actors or actresses, in public performance and Art, as a novel attempt, data analytics and the expectation will be a very important research theme in the field. And, besides, the research will be all needed to the producing companies, producers of public performance, actors and actresses. Therefore, through the extended adaptation of data analytics to the public performance and Art, we have to overcome the restriction and limitation of musical market that now organizing in fix on "Star Marketing as a big problem in Musical", instead of highly acclaim for the acting of veteran musical actors and its quality.

This meaningful change will lead the producing a high quality creation of Art. As a result, Art Market will success in that points that (1) produce actors himself highly acclaimed, (2) can produce high quality Art creations gradually, (3) can know the spectator's emotion exactly in time, (4) can adapt the good result to the practice model of upcoming actors and actresses, (5) can adapt the result of the analysis for spectator's emotions to the next creation, and (6) can activate the industry of public performance and Art systematically under a scientific method.

Acknowledgement

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