Retraction

Retracted: Optimization of Self-Media Film and Television Content Production and Dissemination Paths under the Background of Artificial Intelligence

International Journal of Antennas and Propagation

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope

(2) Discrepancies in the description of the research reported

(3) Discrepancies between the availability of data and the research described

(4) Inappropriate citations

(5) Incoherent, meaningless and/or irrelevant content included in the article

(6) Manipulated or compromised peer review

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

References

[1] Y. Zhang and X. Meng, "Optimization of Self-Media Film and Television Content Production and Dissemination Paths under the Background of Artificial Intelligence," *International Journal of Antennas and Propagation*, vol. 2022, Article ID 7983798, 9 pages, 2022.

Hindawi

Research Article

Optimization of Self-Media Film and Television Content Production and Dissemination Paths under the Background of Artificial Intelligence

Yunsheng Zhang[1] and Xiaoping Meng [2]

[1]*Faculty of Journalism, Lomonosov Moscow State University, Moscow, Russia*
[2]*Shandong Sport University, Jinan 250000, China*

Correspondence should be addressed to Xiaoping Meng; mengxiaoping@sdpei.edu.cn

The development of Internet technology and cloud computing has promoted the rapid development of self-media technology. The self-media technology has better people-friendliness compared to the traditional media communication mode, so it has gained more popularity compared to the traditional media mode. For professional self-media teams, the popularity and clicks of self-media content are very critical. It needs to make corresponding predictions and judgments according to the content and transmission path of the self-media. However, self-media is transmitted in the form of video, which involves a huge amount of data. This team of self-media staff is a more difficult and tedious task. This study uses the atrous convolution and long short-term memory neural network to predict the video content, sound features, and propagation path of self-media technology. Atrous convolution is more suitable for research objects with more data. The research results show that the atrous convolution and LSTM methods have better feasibility and credibility in predicting three special characteristics of self-media. Compared with a single atrous convolution, the feature prediction errors of the three kinds of self-media are smaller by using the atrous convolution and LSTM hybrid method. The largest prediction error is 2.39%, and this part of the error is mainly due to the sound characteristics of self-media technology.

1. Introduction

With the rapid development of 4G and 5G technologies, the speed of signal propagation continues to accelerate. It also allows larger volumes of content to be distributed, and it has higher stability and faster distribution. Video communication has become a possibility, and video communication technology has also developed rapidly. We Media platforms have also emerged many different forms of content at this stage. This also promotes the development of self-media technology [1, 2]. The main advantage of self-media technology is that it does not limit the people who use it, and it also has high timeliness. This greatly promotes people's interest and hobby for self-media technology. The content of self-media technology will not be restricted, only when it is within the legal scope [3, 4]. This raises higher requirements

for the content of self-media technology. For the communication platforms of self-media technology, this is mainly self-media platforms such as Douyin and Xigua Video. Douyin should be a popular self-media platform that allows everyone to make videos and publish them. The content of these self-media videos will be appreciated by more people after dissemination. Many international friends will also open Douyin to spread self-media content. To a certain extent, self-media technology has shortened the distance between people's lives [5, 6]. It also allows people to learn more about local customs and different living customs. This makes it possible to watch different living habits through mobile phones, which has won more people's interest. We Media platforms also allow you to shoot videos of your own life for sharing, and it can also let more people know about their living conditions and customs. It can be said that We

Media technology has brought people more opportunities to understand different cultures, and it has also brought more fun to people's lives. For most people, self-media technology is just a platform for entertainment and sharing of life. They have no in-depth demand for the content of self-media technology [7, 8]. They just seek their own happiness through the self-media technology platform, which is also an important part of improving people's spiritual life. However, for professional self-media personnel, this puts forward higher demands on the content of self-media technology and the propagation path of self-media technology. The most important aspect of the content of self-media technology is that it can attract more attention and appreciation of people. This requires that the content of self-media technology can provide more material and more suitable scene matching in a shorter video. It is not just an introduction to a state of life. The content of self-media technology needs to include sound, color, content, and information content. If the content of a self-media technology can quickly attract people's attention through a brief introduction, or it can also use sound and environmental changes to attract people's attention, this shows that the content of this self-media technology has achieved great success. The content of self-media technology and the dissemination path of self-media technology are two key core parts.

For self-media technology, before a new self-media work is released, it is necessary to evaluate whether the content of self-media technology will attract people's attention. For a professional self-media team, a self-media video will take a lot of time and financial and material resources, which requires this self-media content to attract more people's interest, which will achieve the expected effect, economic benefits [9, 10]. The content of We Media is not only to spread the positive energy of the society but also use We Media to traditionally have more knowledge necessary for life. On the one hand, the content of the self-media can let people know more news knowledge, and on the other hand, the content of the self-media can let people learn more knowledge. This may be the two main aspects of success. We Media technology has attracted more people than TV shows because of its short videos and relatively refined content. Therefore, before a self-media video is released, the team members need to understand the environment setting, content, connotation, and sound of self-media to arouse people's resonance and interest [11, 12]. However, everyone has different feelings about different video content, and it is difficult to complete the true evaluation of self-media technical content only by relying on the feelings of relevant personnel in the team. At the same time, different self-media platforms have customers with different interests. This requires the self-media team to find a suitable communication path. This shows that the dissemination path and content of self-media technology are the keys to success. For different self-media platforms, it will have different numbers and different hobbies of customers. If the content of self-media can fully meet the interests of more people on the platform, it will win more fans and economic benefits.

The content and dissemination path of self-media video is a tedious task. If only the staff of the self-media team go to find suitable content and dissemination paths according to their own interests and experience. Not only is this a tedious task, but it is also a mode that can easily lead to large errors. Artificial intelligence technology has great advantages in processing tedious data, which has been proven in many fields [13, 14]. The content and propagation path of self-media technology can be converted into the form of data for relevant prediction [15, 16]. Therefore, artificial intelligence methods can bring certain benefits to the prediction of the content and propagation paths of self-media videos. Artificial intelligence methods can find the correlation of data through a large amount of data, even if the data is complex, it is irrelevant that the amount of data is huge [17, 18]. This is the task that artificial intelligence methods are good at it. After so many years of development of artificial intelligence technology, it has been able to perform most of the prediction and feature extraction work. It has algorithms suitable for space, time, and environmental characteristics, and there are many variants of these algorithms. This provides researchers with more options, and these algorithms will also design the construction of various network layers and the selection of hyperparameters [19]. This also promotes the application of artificial intelligence methods in the content and dissemination of self-media technology.

This research uses artificial intelligence methods to predict the content and dissemination paths of self-media technology. According to the characteristics of self-media content and propagation paths, this study adopts the atrous convolution and LSTM methods in the field of artificial intelligence to predict relevant features. This will promote the greater success of self-media technology. This study is divided into five parts according to the needs. Section 1 explains the importance of the content of self-media technology and the propagation path to the success of self-media, and it also explains the relevant significance of artificial intelligence methods. Section 2 introduces the related research status of self-media technology. The system design scheme of the artificial intelligence method to predict the content and dissemination path of self-media technology is studied in Section 3. Section 4 investigates the accuracy of atrous convolution methods and LSTM methods for predicting self-media content and propagation path-related features. In this study, the average error histogram, scatter plot, and box plot are used to describe the accuracy of atrous convolution and LSTM methods in predicting self-media content and propagation paths. Section 5 summarizes the significance and important value of artificial intelligence methods to self-media technology.

2. Related Work

Self-media technology has developed rapidly in people's lives, and it is also constantly improving people's quality of life. A large number of people have found the joy of life through the development of self-media technology. It allows people to communicate with different people through text or video. It is precisely because of these advantages of We Media technology that many researchers have done a lot of research on the related characteristics of We Media. Hui and

Zhang [20] believed that the rapid increase in the number of Internet technology and mobile phones has promoted the rapid development of the self-media field, and it has gradually replaced traditional media technology as a new communication force. It mainly studies the influence of We Media network public opinion on social stability. It mainly uses cultural gene algorithm to establish a projection tracking evaluation model of self-media content to measure the network public opinion in self-media. The research subjects used a variety of sample sets from Gansu Province. The research results show that this genetic algorithm can solve the nonlinear and high-dimensional complex problems of self-media samples very well. Zhang et al. [21] has found that the rapid development of Internet technology and cloud computing and other technologies has promoted the rapid rise of self-media technology. In particular, mobile client APPs such as WeChat, Facebook, and Twitter have appeared. New media technology can closely link people's social life, and it also promotes the development of the marketing industry. This study mainly analyzes the impact of self-media technology on the marketing situation of enterprises. It explores the development strategy of enterprise marketing from the form and characteristics of self-media. It analyzes the relationship between the We Media technology and marketing theories combined with the actual business case of Xiaomi mobile phones, which verifies the feasibility of the proposed strategy for marketing. The research results show that self-media technology is an advantageous way to promote enterprise marketing. Wang et al. [22] has found that the development of social networking services is rapid, which allows users to communicate with media at any time. However, due to the large problems of transparency and credibility of information, this leads to some malicious phenomena in the online self-media. This research uses the idea of text classification and the method of intent detection to study the text feature extraction and semantic information extraction scheme in self-media. It also uses the decision tree pruning model to study the feasibility of the classifier in the classification of self-media features. The research results show that this method can improve the accuracy of self-media text recognition. Wang et al. [23] explored citizens' participation in journalism through related research on We-media. We Media is a media communication method that everyone can participate in. It can also promote the dissemination of news, and it can also promote the development of the news industry. The research object it uses comes from the relevant data of the LGBT community in mainland China from the media. This research is mainly concerned with the conceptualization and theorization of the news industry. It will also consider the degree of participation in civil society life due to the technical characteristics of We Media technology. Hou et al. [24] has found that WeChat Official Account (WCOA) has also become a popular self-media platform. It can also conduct chat and video dissemination, which promotes the further development of the self-media industry. It mainly uses the F-SVFR model to study people's behavior information and the change of people's quantity in the form of WeChat self-media. It first studies people's behavioral changes after receiving new self-

media information. Finally, it defines an estimated popularity formula for WCOA. The results of the study show that the popularity of WCOA, a form of self-media, is correlated with the number of followers. Hou et al. [25] mainly used CNN technology and A-CNN technology to explore the accuracy of language interaction and intent detection in self-media technology. The research results show that the A-CNN method has higher accuracy in predicting the text and semantic features of the self-media compared with the traditional CNN method. The maximum accuracy can be improved by 9.68%. This has important research value and significance for textual or semantic malicious detection of We Media technology. It can be seen that most researchers have not conducted research on the success factor of self-media content and communication paths. They only focus on some characteristics of the self-media itself. It also rarely uses artificial intelligence methods to study self-media technology. This study uses atrous convolution and LSTM methods to map the relationship between self-media content and propagation paths and success factors, which is an efficient and accurate way. For self-media staff, this is also a relatively stable method.

3. Scheme of Artificial Intelligence Method for Self-Media Content and Communication Path Research

3.1. The Significance of Artificial Intelligence Methods for Self-Media Research. Through the research in the first section, it can be found that the content and transmission path of self-media videos are the key factors. However, the content of self-media technology will be designed with factors such as video content, sound, and environmental settings, and the propagation path of self-media technology will involve different self-media technology platforms. These aspects have brought more problems to the staff of the self-media team. The effect of self-media technology will be displayed through video, but different people will have different feelings about different self-media content. The artificial intelligence method can extract the content of the media technology and the characteristics of the propagation path, and it can also predict the unknown content through the learning of a large amount of data. It can also map the self-media content and the relationship between propagation paths and success factors through the learning of large amounts of data. The artificial intelligence method can not only extract the content of the media and the relevant characteristics of the propagation path but also complete the mapping of complex relationships. This brings a new solution to the research of self-media technology. Artificial intelligence technology can quickly and efficiently process the huge amount of data contained in self-media technology, which saves a lot of time and manpower. In addition, it can map the relationship between self-media content and success factors.

3.2. Design Scheme of Atrous Convolution and LSTM Method in Self-Media Technology Application. The main goal of this study is to use artificial intelligence methods to map the

relationship between self-media content and propagation paths and self-media video success factors. According to the characteristics and importance of We Media technical content, this study mainly selects the video content, sound, and propagation path of We Media as the research objects. Video content and sound are the key factors in attracting people's interest. The propagation path can determine the path of different people's preferences for self-media content. At the same time, according to the characteristics of the self-media content involved in this study, the atrous convolution and LSTM methods will be selected as the artificial intelligence methods used in this study. The content of We Media technology contains a lot of data compared to other research objects, mainly because the content of We Media technology is mainly composed of video data. Figure 1 shows the design scheme of the atrous convolution and LSTM method in self-media content and propagation path feature prediction. The first step is to convert the relevant content of the self-media video and the data of the propagation path into the data form required by the atrous convolution and LSTM method. These three feature data will be input into the atrous convolutional neural network for convolution operation. The relevant features of the self-media content after the convolution operation will continue to be input to the LSTM for temporal feature extraction. Finally, these data are mapped to success factors through an activation function. Success factors refer to economic benefits, number of fans, traffic, etc. These factors will affect the dissemination of self-media content and ratings.

The reason why this study chooses a variant of CNN, the atrous convolutional neural network, is that the content and propagation path of self-media technology will involve more features and data. Although the CNN method has a weight sharing mechanism, it requires more network layers to extract features related to self-media technology, which also increases the amount of parameter computation. The amount of data contained in the self-media technology is huge because the self-media exists in the form of video. The amount of parameters of CNN is larger than that of the atrous convolutional neural network. Figure 2 shows the operation process of atrous convolution to extract features. It can be seen from Figure 2 that the convolutional neural network will selectively select weight factors during operation. As shown in Figure 2, for a 5 * 5 filter, it only outputs one weight factor, and there are many holes in the middle. This is the principle that atrous convolution can reduce parameter operations compared to traditional CNN methods. Atrous convolution has better performance for large datasets. In Figure 2, the dotted line represents the process of backpropagation. There is a loss function when the hole convolution maps the relationship between the self-media content, the propagation path, and the success factor, which is a kind of backpropagation calculation process.

3.3. Introduction to Main Equations and LSTM Algorithm.
Figure 3 shows the principle and workflow of the LSTM method. The sound and content of self-media technology will involve temporal features because video is a continuous

feature. There is a greater correlation between the content and sound of the previous moment and the latter moment. Therefore, this study will also use the LSTM method to extract the temporal features of self-media video content. In Figure 3, it has two outputs and two inputs. For the two outputs, one output is the data concatenating the activation function. The other output will be connected to the forget gate of the next neural network layer. For the two inputs, one input is the content from the self-media technology at the previous moment. Another input is the input corresponding to the characteristics of the self-media content at the current moment. The LSTM layer shown in Figure 3 is not the last of the entire network layer. Its output 1 represents the connection to the next layer, and the output 2 represents the last output data.

There are certain differences between atrous convolution and CNN. (1) shows the calculation criterion of the output feature size of the atrous convolutional neural network, and a round-down method is adopted here. The calculation method of output features also has a certain similarity with CNN, which is related to factors such as convolution kernel, stride, and padding. (2) shows the equivalent formula for the output size between atrous convolution and CNN. When calculating the output size of atrous convolution, this requires calculating the equivalent relationship between the two. (1) is then used to calculate the output size of the atrous convolution,

$$S_{out} = \frac{S_{in} + 2pading - S_{kenal}}{step} + 1, \tag{1}$$

$$K_E = K + (k - 1) \times (d - 1). \tag{2}$$

(3) shows a calculation method for deconvolution, which can be calculated from the size of the original convolution. This can be understood as an inverse form of convolution. (4) introduces the calculation criteria for the atrous convolution receptive field. This is also an iterative way of computing,

$$S_{in} = (S_{out} - 1) \times step + S_{kenal} - 2pading, \tag{3}$$

$$V_i = V_{i-1} + S_{kenal-i} \times \prod_{i=1}^{i-1} step_{i-1}. \tag{4}$$

Whether it is the operation process of CNN or hole convolution, this requires a loss function. A loss function is a calculation that finds the difference between the predicted value and the actual value. It is also a standard for gradient descent. (5) shows the calculation criterion of the mean square error loss function, which is also a commonly used loss calculation method in atrous convolution,

$$L = \text{MSE}(q^{real}, q^{pre}) = \frac{1}{nm} \sum_{k=1}^{N} \sum_{j=1}^{M} \left(q_{kj}^{real} - q_{kj}^{pre} \right)^2. \tag{5}$$

There are many options for the excitation function in the atrous convolution, which can nonlinearize the relationship
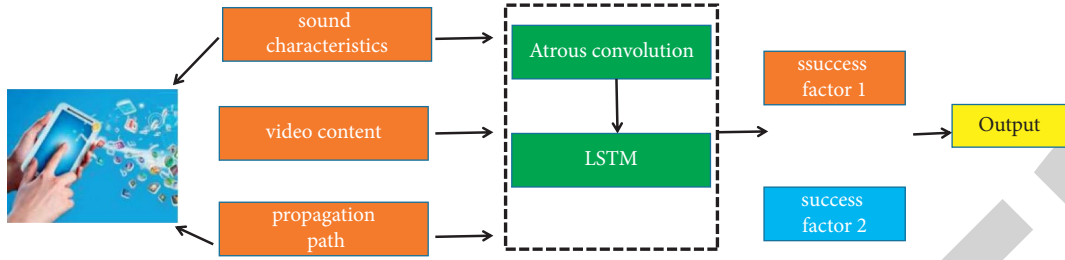
FIGURE 1: Design of atrous convolution and LSTM methods in self-media content and propagation path prediction.
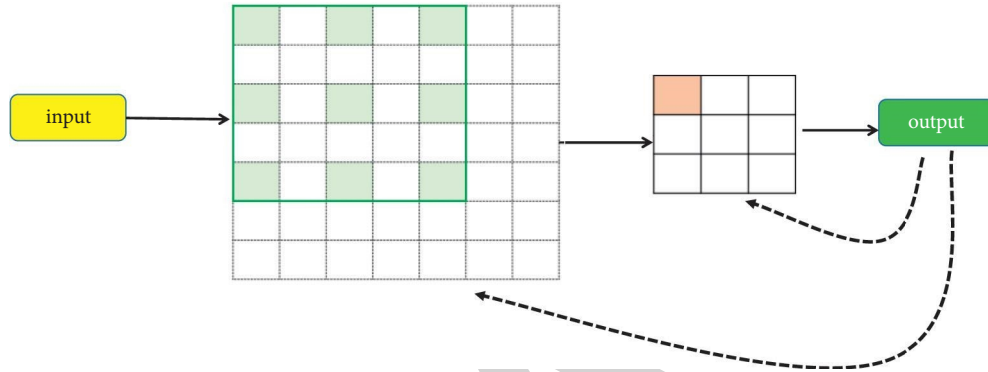

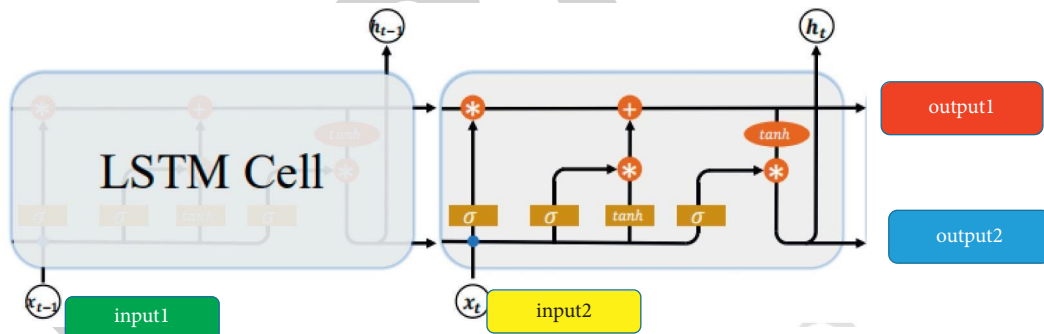FIGURE 2: The working principle of the atrous convolution algorithm.

FIGURE 3: The working principle of the LSTM algorithm.

between the data, which can also map out complex data relationships. Otherwise it only has a linear relationship. (6) shows how the excitation function is calculated,

$$a^l = ReLU\left(z^l\right) = ReLU\left(W^l a^{l-1} + b^l\right). \tag{6}$$

(7) shows the strategy of the input gate, which is also a strategy that uses the distribution of weights for input,

$$f_t = \sigma\left(w_f \bullet [h_{t-1}, P_t] + b_f\right). \tag{7}$$

The use of LSTM is relatively extensive. Its biggest feature is the door structure, which has a four-layer door structure. The first layer of the gate structure is the forget gate, which is complex and selective to forget part of the historical information, and it does not input all the historical information. (8) and (9) show one strategy for forgetting gates,

$$i_t = \sigma\left(W_{xi} * x_t + W_{hi} * h_{t-1} + W_{ci} \circ C_{t-1} + b_i\right), \tag{8}$$

$$f_t = \sigma\left(W_{xf} * x_t + W_{hf} * h_{t-1} + W_{cf} \circ C_{t-1} + b_f\right). \tag{9}$$

The output gate will input the information of both to the forget gate structure of the next layer of LSTM. It also selectively outputs part of the information in order to reduce the computational load of LSTM. It is also to extract the characteristics of the research object more accurately. (10) and (11) describe the strategy for the output gate,

$$o_t = \sigma\left(W_{xo} * x_t + W_{ho} * h_{t-1} + W_{co} \circ C_t + b_o\right), \tag{10}$$

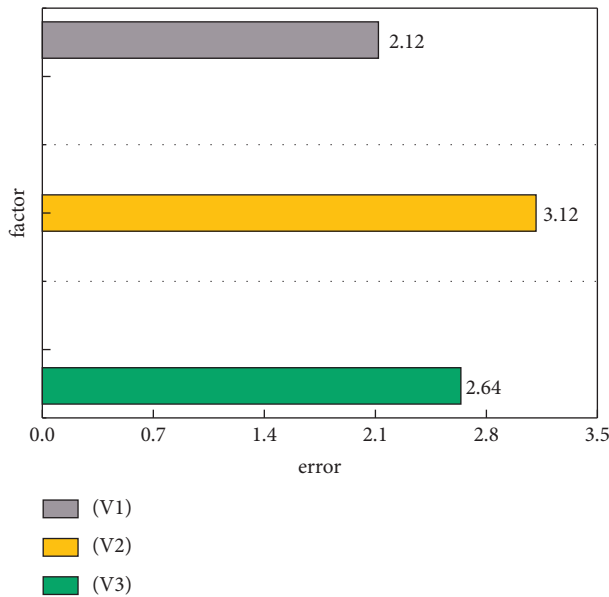$$h_t = o_t \circ \text{ELU}\left(C_t\right). \tag{11}$$

FIGURE 4: The prediction errors of self-media technical content and traditional path-related features using a single atrous convolution.

4. Result Analysis and Discussion

The main purpose of this research is to use atrous convolution and LSTM methods to achieve feature prediction of self-media content and propagation paths. This mainly involves three characteristics, the self-media, which are video content, sound, and propagation path. This is also the key to the success of the media. The main features that viewers are interested in are the video content and sound of the self-media content. Atrous convolution is used to extract the spatial relationship of the three features of video content, sound, and propagation path. It can also map the relationship between these three features and self-media success factors. The LSTM method is mainly used to extract the temporal relationship of the three features of video content, sound, and propagation path. In order to ensure that the atrous convolution and LSTM methods will learn more real features, it selects relevant data from the Shenzhen We-Media Platform. Shenzhen has relatively dense and multi-type living groups, which can reflect the interests and characteristics of more groups in self-media. At the same time, Shenzhen's self-media technology and Internet technology are more developed than other cities, which can ensure that it will collect more real and effective data sets.

In order to prove that there is a certain relationship between the content of self-media technology and the propagation path and time, it is also to prove the importance of the LSTM method for predicting the content and propagation path of self-media technology. This study separately investigates the average prediction error of atrous convolution in predicting the self-media content and propagation paths. The average prediction error is an average calculation method for all error values, which can better reflect the overall situation of atrous convolution for self-media content and propagation path prediction. Figure 4 shows the average error distribution for three
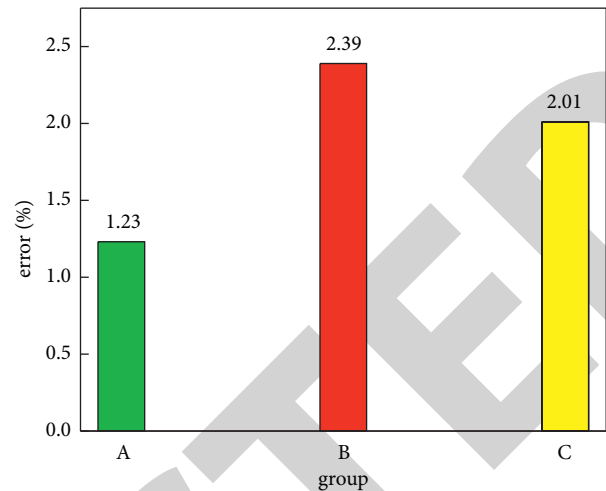

FIGURE 5: The prediction error of self-media technical content and traditional path-related features using the atrous convolution and LSTM hybrid scheme.

characteristics of self-media content and propagation paths. V1 represents the prediction error distribution of the video content. V2 represents the prediction error of the sound feature. V3 represents the prediction error of the propagation path. Although all three error values are within the acceptable error range of 5%, all three error values are relatively large. All errors are distributed over 2%. This is detrimental to the decision-making and judgment of the staff of the We Media team. The largest error is even more than 3%. The source of the largest error is mainly the sound feature of the self-media with the strongest temporal correlation.

In order to reduce the prediction error of a single atrous convolution in predicting the self-media content and propagation paths, this study adopts a method of mixing atrous convolution and LSTM for prediction. Figure 5 shows the prediction error utilization of the hybrid method for the three characteristics of the self-media content and propagation path. A represents the prediction error of the self-media video content. B represents the prediction error of self-media voices. C represents the prediction error of the propagation path. Overall, the prediction errors of the three features of ABC have been significantly reduced after using the LSTM method. This shows that the LSTM method is more meaningful for predicting the content and propagation path characteristics of self-media. This can also show that the content of the self-media technology and the three characteristics of the propagation path also have obvious temporal correlation. This cannot be ignored when using artificial intelligence methods to predict the characteristics of self-media content and propagation paths. Compared with the prediction error of 3.12%, the prediction error of the sound feature has been reduced to 2.39% after using the LSTM method. The prediction error of the video content features of We Media is also reduced from 2.12% to 1.23%. This is also a large reduction. The decline of video content features in We Media is 0.89%. The decline of sound features is 0.73%.

From the above description, it can be seen that the video content of the self-media technology has a small prediction
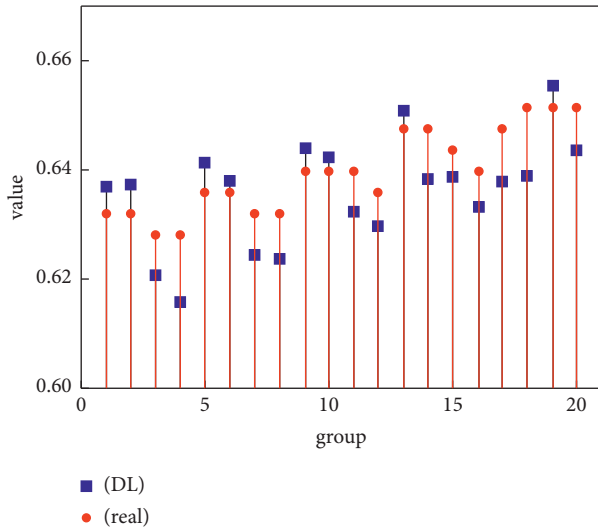
Figure 6: Distribution of predicted and actual values of video content features from self-media.

Figure 7: Box map distribution of predicted and actual values of sound features from the media.

error. This study selected 20 groups of characteristics of the self-media video content for research. Figure 6 shows the distribution of predicted and actual values of video content features using atrous convolution and LSTM methods. On the whole, the atrous convolution and LSTM methods have been able to predict the characteristics of self-media video content well, which is a beneficial error for self-media staff to efficiently grasp the content. From these 20 sets of data, there is a cross-distribution between the predicted value of the video content and the actual value, which indicates that the weight distribution of the atrous convolution and LSTM methods is relatively stable when predicting the characteristics of the video content. The atrous convolutional neural network and LSTM algorithm can also effectively predict the fluctuation of video content from the media, which is also a good state.

Through the previous research, it can be found that the prediction error of the sound feature is the largest among the three features of the self-media. This shows that sound characteristics are also a key factor affecting the success of self-media. The pursuit of sound special effects by different groups has been increasing, which requires the staff of the media team to effectively grasp and pay attention to the sound characteristics. The box plot can intuitively reflect the distribution and value of the predicted value of the related features of the media technology, which is more advantageous than the scatter plot or the curve graph. Figure 7 shows the box distribution of the predicted and actual values of the sound features in the media. In Figure 7, the black and blue lines represent the average of the predicted and actual values of the propagation path characteristics from the media. In terms of the shape of the box diagram and the distribution of data values, the predicted values of the sound features are in good agreement with the actual values. This also shows that the prediction performance of the atrous convolution method and LSTM method can provide reliable support for self-media workers. The biggest flaw may be that the actual value of the sound feature is larger than the actual value, but the error distribution of these two parts is also acceptable.
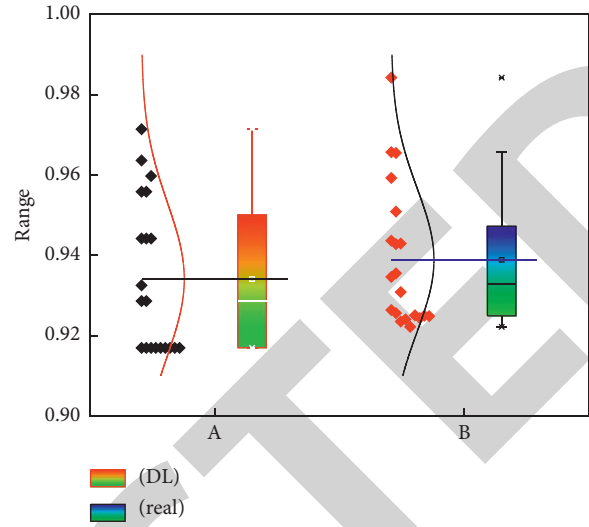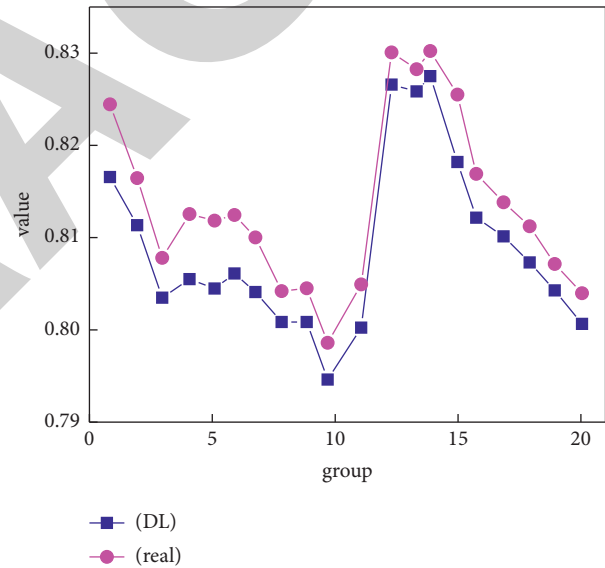

Figure 8: The predicted value of the propagation path feature and the actual value distribution of the feature using atrous convolution and LSTM.

Through the previous research, it can also be found that the propagation path is also a key part of the self-media technology. The propagation path also affects the success factor of the We Media technology. Different transmission routes will have different groups. Figure 8 shows the distribution of the propagation path specific predictability and the actual propagation path value of the self-media technology. In general, the eigenvalues of the propagation path are in good agreement with the actual values, whether it is the size of the eigenvalues or the change trend of the eigenvalues. However, the actual values of the eigenvalues of the propagation path are smaller than the predicted data, which is also within a reasonable error range. It can also be clearly seen from Figure 8 that the propagation paths have relatively large fluctuations among the datasets 10–15.

Although these eigenvalues are difficult to predict, the atrous convolution and LSTM methods perfectly predict the eigenvalues of the propagation path. Overall, atrous convolution and LSTM methods have good confidence in predicting propagation paths. There are more errors in groups 3–8, which may be caused by the fact that this part of the dataset is relatively small or that there are more mutations in this part of the characteristics.

5. Conclusions

The self-media method is a new type of media and video communication medium. It has gained more popularity and greater success in this day and age. The content and dissemination path of self-media technology is the key to the success of self-media. This requires the work team of self-media to effectively grasp the content of film and television and the transmission path so as to ensure the success of We Media technology. The self-media video content is disseminated by means of video, which will generate a huge amount of data. This has brought more difficulties to the self-media team in judging the content and dissemination paths of film and television. The artificial intelligence method has shown more advantages in processing a huge amount of data. The staff of the self-media team can consider using artificial intelligence methods to assist judgment.

In this study, atrous convolution in the artificial intelligence method and LSTM method are used to predict the relationship between video content, sound characteristics and propagation path characteristics, and success factors in self-media technology. Atrous convolution has better advantages than CNN methods in dealing with factors of hidden layers, so the atrous convolution method is chosen in this study. In order to verify the necessity of the LSTM method, this study first analyzes the accuracy of a single atrous convolution in predicting the influence content and propagation path of self-media. Although the prediction errors of the three features are within the acceptable error range, all three errors are relatively large. This has brought a large error of judgment to the staff of the self-media team. The largest average prediction error reached 3.12%. When it utilizes one of the LSTM methods, the prediction errors of the three features of the self-media technology have been greatly reduced. The largest prediction error is only 2.39%. Among the content and propagation path characteristics of self-media technology, the largest prediction error comes from the prediction of sound characteristics, which is obviously related to the time characteristics. Once atrous convolution and LSTM methods are trained, it can predict the success factor of self-media techniques. The staff of the self-media team can only improve these three characteristics, and it can get the relevant data of the success factor in the actual work. In general, the atrous convolution and LSTM methods have high feasibility in terms of self-media video content and propagation paths.

Data Availability

The datasets used during the current study are available from the corresponding author on reasonable request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

References

[1] K. Tsuriel, S. Gvirsman, L. Ziv, and H. Afriat-Aviv, "Servant of two masters: how social media editors Balance between Mass media Logic and Social media logic," *Journalism*, vol. 22, no. 8, pp. 1983–2000, 2021.

[2] J. Gainous, J. P. Abbott, and K. M. Wagner, "Traditional versus Internet media in a restricted information environment: how trust in the medium matters," *Political Behavior*, vol. 41, no. 2, pp. 401–422, 2019.

[3] H. E. Lee, J. Y. Kim, and C. Kim, "The influence of parent media use, parent attitude on media, and parenting style on children's media use," *Children*, vol. 9, no. 1, 37 pages, 2022.

[4] P. Jakobsson, J. Lindell, and F. Stiernstedt, "A neoliberal media welfare state? The Swedish media system in transformation," *Javnost-the public*, vol. 28, no. 4, pp. 375–390, 2021.

[5] M. A. Salaudeen and N. Onyechi, "Digital media vs. mainstream media: exploring the influences of media exposure and information preference as correlates of media credibility," *Cogent arts & humanities*, vol. 7, no. 1, Article ID 1837461, 2020.

[6] Z. Zhang, Y. Zhang, and D. Shen, "The dynamic correlations between mass media news and new media news in stock market," *Frontiers in physics*, vol. 8, no. 6, p. 179, 2020.

[7] F. Reiter and J. Matthes, "Correctives of the mainstream media? A panel study on mainstream media use," *Digital Journalism*, vol. 11, no. 3, pp. 1–20, 2021.

[8] A. Levitskaya and A. Fedorov, "Theoretical model of media competence's development of teachers-to-be in the process of the analysis of manipulative media influences," *Media education-mediaobrazovanie*, vol. 2, no. 7, pp. 323–332, 2021.

[9] L. Bai, X. Yan, and G. Yu, "Impact of CEO media appearance on corporate performance in social media," *The North American Journal of Economics and Finance*, vol. 50, no. 1, Article ID 100996, 2019.

[10] R. Han, J. Xu, D. Pan, H. Media Exposure, M. Trust, and M. Bias, "How media exposure, media trust, and media bias perception influence public evaluation of COVID-19 pandemic in international metropolises," *International Journal of Environmental Research and Public Health*, vol. 19, no. 7, p. 3942, 2022.

[11] C. Markov and Y. Min, "Understanding the public's animosity toward news media: cynicism and distrust as related but distinct negative media perceptions," *Journalism & Mass Communication Quarterly*, vol. 12, no. 14, 2021.

[12] A. Jha and R. Gangwar, "Construct (suggestive) models for media education in India: a connecting threads of media academia and media industry," *Media education-mediaobrazovanie*, vol. 2, no. 7, pp. 211–221, 2020.

[13] O. Niel and P. Bastard, "Artificial intelligence in nephrology: core concepts, clinical applications, and perspectives," *American Journal of Kidney Diseases*, vol. 74, no. 6, pp. 803–810, 2019.

[14] E. Alekseeva, "The opposition of symbolism and connectionism in the history of artificial intelligence development," *Istoriya-elektronnyi nauchno obrazovatelnyi zhurnal*, vol. 11, no. 11 (97), 2020.

[15] S. Banerjee, "A framework for designing compassionate and ethical artificial intelligence and artificial consciousness,"

Interdisciplinary Description of Complex Systems, vol. 18, no. 2-A, pp. 85–95, 2020.

[16] X. Jing, P. Peng, and Z. Huang, "Analysis of multi-level capital market linkage driven by artificial intelligence and deep learning methods," *Soft Computing*, vol. 24, no. 11, pp. 8011–8019, 2020.

[17] X. Xiong, "Artificial intelligence control algorithm for the steering motion of wheeled soccer robot," *International Journal of Pattern Recognition and Artificial Intelligence*, vol. 33, no. 10, Article ID 1959034, 2019.

[18] C. Ratner, "When "sweetie" is not so sweet: artificial intelligence and its implications for child pornography," *Family Court Review*, vol. 59, no. 2, pp. 386–401, 2021.

[19] M. Lee, "An analysis of the effects of artificial intelligence on electric vehicle technology innovation using patent data," *World Patent Information*, vol. 63, no. 1, Article ID 102002, 2020.

[20] Z. Hui and J. Zhang, "Research on the Enthusiasm Level of Self-media Network Public Opinion Based on Projection Pursuit model," *University politehnica of bucharest scientific bulletin series c-electrical engineering and computer science*, vol. 80, no. 3, pp. 931–944, 2018.

[21] S. Zhang, J. Li, and M. Jodylf, "The related factors analysis of ideological and political effectiveness in self-media based on data mining," *Journal of Intelligent and Fuzzy Systems*, vol. 37, no. 3, pp. 3247–3255, 2019.

[22] Y. Wang, S. Liu, S. Li et al., "Stacking-Based ensemble learning of self-media data for marketing intention detection," *Future Internet*, vol. 11, no. 7, p. 155, 2019.

[23] Y. Wang, V. Belair-Gagnon, and A. Holton, "The technologization of news acts in networked news participation: LGBT self-media in China," *International Journal of Communication*, vol. 14, no. 2, pp. 4871–4889, 2022.

[24] W. Hou, X. Di, J. Li, and L. Cheng, "Research on the behaviour and law of quantity growth of followers based on WeChat official account," *Behaviour & Information Technology*, vol. 3, no. 4, Article ID 1899286, 2021.

[25] Z. Hou, K. Ma, Y. Wang et al., "Attention-based learning of self-media data for marketing intention detection," *Engineering Applications of Artificial Intelligence*, vol. 98, no. 2, Article ID 104118, 2021.