Tracing the Source of Journalism Theory on the Integration of Multidimensional CAD and Hybrid Teaching Strategies in the Context of New Media

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Abstract. The multi-dimensional computer-aided design system has been rapidly developed in the teaching of journalism theory traceability, and it has also promoted the development of traditional journalism teaching methods, but it lacks a certain degree of intelligence and the ability to quickly collect relevant information. With the advent of new media technology, this requires the development of news theory teaching in the direction of big data. This article combines the computer-aided design news theory tracing teaching mode and new media technology to propose a mixed teaching news theory tracing mode. Combining the advantages of new media technology, using convolutional neural networks to predict and match features related to teaching news theory, and combining the timeliness of news using long and short memory neural networks and predicting time features related to news teaching. Judging from the conclusion, the multi-dimensional computer-aided design system and the hybrid news theory traceability teaching method proposed in this paper have good accuracy and generalization ability, and generally achieved the expected results. From the point of view of statistical parameters, the predicted value has good correlation and the maximum error is only 2.46%, and the maximum error of time feature information is only 1.98%.

Keywords: News Theory; Computer Aided Design System; New Media Technology; Hybrid Method

1   INTRODUCTION

Computer-aided design system is a new type of teaching model since the beginning of the 21st century. It also promotes the teaching work related to the traceability of news theory. News is characterized by high real-time, short and large amount of information [1]. The teaching of news is different from the teaching of other courses. It requires not only the real-time nature of news but also the traceability of news. Although the traditional computer-aided design system can more intuitively reflect the teaching of news, news is constantly updated in real time, which requires more real-time information updates from the Internet in the teaching of news theory traceability. The computer-aided design system can only output the input content of the teacher, but also lacks some interactive content and lacks some real-time update reference news content. This requires a new type of mixed teaching mode to promote the teaching of journalism theory traceability. The development of new media technology has also promoted the rapid dissemination of news and other information, and has changed the traditional way of disseminating paper news, allowing more people to conduct real-time theoretical news information in a faster way. This gives us the possibility of a better tracing teaching model of journalism theory, which benefits from the rapid development of new media technology and big data technology.

In the context of new media, news is delivered in the form of short videos and micro videos to ensure the timeliness of news. At the same time, new media technology can enable more people to transmit and share their own real-time information, which makes more people in the era of big data and information [2]. But for the teaching of journalism theory, how to use the computer-aided design system and new media to combine, this is a more meaningful and can improve the learning interest of journalism students on the theoretical basis. When using the computer-aided design system to teach the traceability of news theory, it is not only the teaching of the content of the courseware, but also the need to supplement the real-time content according to the content of the courseware and the supplement of the similar news theory is the key to the understanding of news traceability. New media technology can improve a communication media. Compared with the traditional paper-based news tradition, in the era of big data, the computer-aided design teaching system needs to be more intelligent. This is the need and development direction of the traceability education of news theory. The core of new media technology is big data, and the computer-aided design teaching system can provide a good communication medium. This requires the use of neural network technology to explore the relevance of news theory and disseminate it to students and teachers. This is helpful To improve students' deep understanding of journalism theory, it is also a great way to increase the interest in the teaching of journalism theory traceability.

With the development of big data technology and the vigorous advancement of new media technology, news theories and news materials have provided a large amount of data resources, which can provide data support for the teaching of the traceability of news theory. At the same time, it can combine the existing computer-aided design teaching system and new media technology to propose a neural network-based hybrid news theory traceability teaching model. Not only can we trace the news theory based on the content of the teacher's courseware, but we can also explore similar news materials based on the content of the news theory to improve students in-depth understanding of news theory.

2   RELATED STUDIES

Bednarek and Carr [3] believes that data analysis is more important for the study of journalism theory, but the combination of multiple disciplines or deeper theories restricts the development of digital journalism. He proposed a computer-aided language analysis method to analyze language issues in journalism theory. At the same time, the advantages and disadvantages of the news language library were evaluated. Qi et al. [4] thinks that data mining and data visualization technologies have changed the narrative and dissemination methods of news dissemination. He

uses historical news information and data mining counts in the computer-aided design system to fully extract news features. The conclusion is that this can deepen readers awareness of news and can deal with logical relationships that cannot be reflected in news methods. Guo and Vargo [5] studied the fake news and misinformation of the 2016 US presidential election through cross-media and computer-assisted methods, and analyzed the impact of the new media ecosystem. Bednarek et al. [6] used the news value analysis method DNVA to study the value of news reporting by combining linguistics and journalism for the news of the National Day. At the same time, he used a computer-aided system to conduct a text analysis of the news. Gaol et al. [7] studied the structure of computer-aided systems for online news media in Indonesia, Malaysia, and Singapore, and they learned about the fragmentation of news consumption patterns on social media. This conclusion is drawn to the classification of news media in the form of news markets, political or economic alliances. Wu et al. [8] proposed the concept of immersive virtual reality news VR. They combined the development of new media technology and computer-aided design system to propose an interactive news dissemination method, and pointed out that the VR news dissemination method improves the interest and credibility of news.

This research mainly combines the computer-aided design of news theory tracing teaching system and new media technology to study mixed and multi-dimensional news teaching methods. This article mainly consists of five chapters. Combined with the big data technology in the context of new media, the traditional computer-aided design system news theory teaching mode has been changed, and it has demonstrated a certain degree of feasibility and accuracy. The first part introduces the advantages and disadvantages of the computer-aided design system in the teaching of news theory, and the influence of new media technology on the teaching of news theory [9]. The second part introduces the current situation of computer-assisted journalism theory tracing teaching work and the current situation of the combination of new media technology and journalism theory teaching. The third part is an introduction to the neural network method used in the research of this article. It is mainly a model suitable for the evaluation of news theory proposed for the real-time and spatial characteristics of news theory. The fourth part mainly analyzes the advantages of the model proposed in this paper for the traditional computer-aided design system news theory teaching from the perspective of the feasibility of the model and the accuracy of the model. The fifth part mainly summarizes the article as a whole.

3 THE NEW METHOD COMBINES NEW MEDIA TECHNOLOGY AND COMPUTER-AIDED DESIGN NEWS THEORY TRACING TEACHING

3.1 Extraction of Spatial Features for the Tracing of News Theory

The core of new media technology is mainly big data, which is the result of the rapid development of big data in recent years. News has a strong real-time nature, which requires timely news information for report transmission. Similarly, in the tracing education of journalism theory, real-time information is also required to have a certain impact on students' classrooms. The multimedia technology is spread in the form of short videos and short news texts through mobile phones and APPs on the Internet, which greatly improves the real-time nature of news [10]. At the same time, this way of dissemination also brings a lot of news feature information. The computer-assisted teaching system is only the output of the news content of the courseware, which belongs to a single output mode, which does not produce real-time news information supplementation and cannot realize an interactive and intelligent teaching method.

In the actual news theory tracing classroom, the computer-aided design system can constantly find other news events that are more relevant according to the content of the teacher's courseware, which will help the tracing work of news theory. Among the big data algorithms, there are both convolutional neural networks suitable for extracting spatial features and long-short memory neural networks suitable for extracting temporal features. For the traceability of news theory, it has both spatial characteristics, such as different geographic locations, and time

characteristic information, such as the connection and influence between different time periods. For the course of journalism theory tracing, we cannot only rely on the visualization function of the computer-aided system to impart knowledge to students. We should combine the communication function and real-time function of new media technology to continuously update the content of the lecture, and then realize the true immersive method and effect of the traceability of the theoretical news theory. Through the joint action of new media context technology and computer-aided systems, the intelligence and real-time nature of the traceability teaching of news theory can be realized.
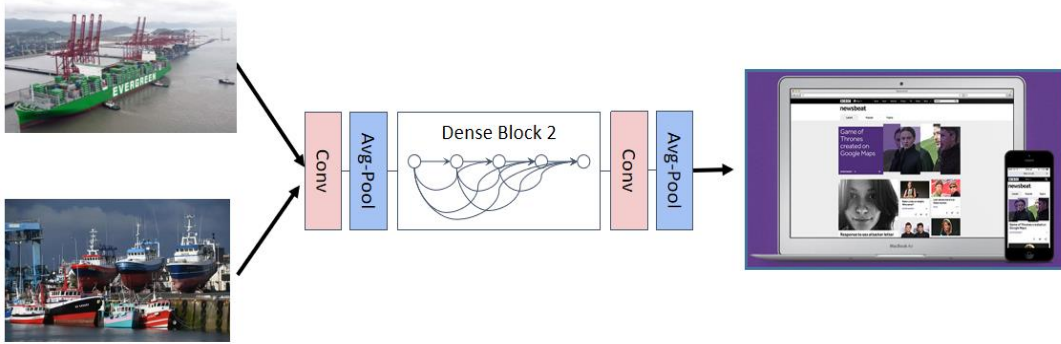

Figure 1: The spatial characteristic process of the tracing of new media technology and computer aided news theory.

The Figure 1 shows the flow of new media technology and computer-aided design system in the teaching of journalism theory traceability. This article needs to make full use of the advantages of convolutional neural networks in extracting spatial feature information to extract news features, and then use the predicted results to correlate news features related to Internet information in real time, and finally achieve visualization through a computer-aided design system. At the same time, it can also realize the interactivity of the journalism theory traceability classroom based on the expressions of students and teachers. For every news event that occurs, they have a certain relevance no matter in space or time. If in real-time news theory lectures, the Internet and computer-aided design systems continue to provide relevant news events or traces of the news events based on the content of the lecture, which will greatly enhance students' interest and theoretical understanding. In this model, the traditional computer-aided design system will play the function of visualizing news information, it will display information in real time through the dissemination of new media technology.

3.2 The Extraction of Time Feature Information Traces the Origin of News Theory

News is a kind of information with obvious time characteristics, and it has obvious relevance in different time intervals, which is similar to the field of language recognition. If we can effectively extract the time characteristics of news theory through the long and short time cyclic memory neural network, we will find a lot of relevant information. News information in the context of new media is also constantly updated in real time, which is different from traditional transmission media. In the teaching of news theory tracing, if the time information of the courseware of the computer-aided design system and the time information under the new media technology can be matched in real time, then the matched news-related information can be visually displayed to the students through the computer-aided design system, which deepens and enhances the understanding of journalism theory. In the same way, this will improve the quality and effectiveness of the traceability teaching of journalism theory.

Long and short memory loop neural network is a neural network structure that can process time information. It has been widely used in speech recognition, wind speed prediction and other fields. Based on the advantages of this neural network and the characteristics of news, this is very suitable for the extraction of time features of news theory. In recent years, new media technology has developed rapidly, and forms such as short videos and short literary news have emerged. Groups in any industry can share and communicate their situation and shared things through news-like methods. News is also everything that happens around you. The time information in the news theory class is extracted through the long and short memory loop neural network, and then matched with the information on the new media platform, similar events will be found. For the journalism theory tracing class, it is easier to find relevant information and the characteristics of the news itself.
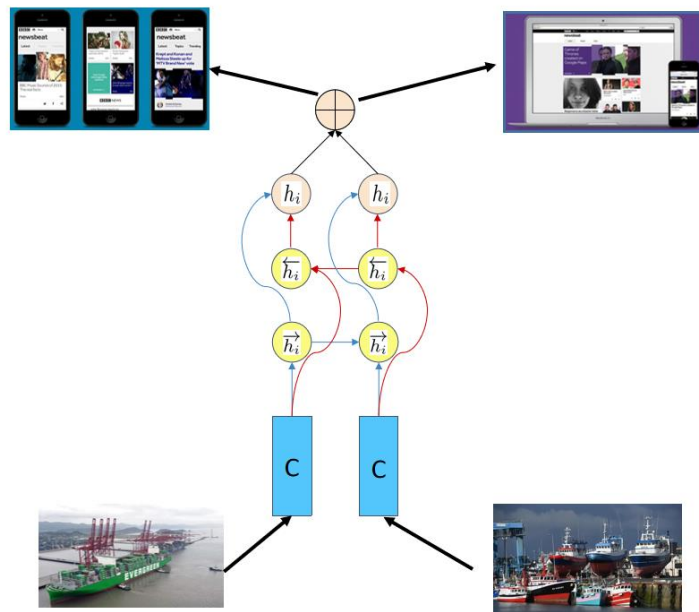

Figure 2: The source of news theory and the process of new media time feature information extraction.

The Figure 2 shows the process and visualization process of extracting news theory traceability and new media platform time characteristic information using long and short memory loop neural networks. First of all, the courseware content of the journalism theory traceability teaching classroom will be input into the long and short memory loop neural network in the form of a matrix, and the historical information will be selected and passed through various door structures. Then the time information and input from the new media platform are back propagated. The loss function is used to continuously minimize the gradient between the news theory feature and the new media feature, and then find the optimal weight. Finally, save the weight parameters of the trained neural network model for use. In the tracing teaching of news theory, multimedia news information can be matched in real time according to the content of the courseware. Finally, the information of the matched new media platform will be visualized on the mobile phone or computer-assisted system for teachers and students to use.

3.3 Prevent Overfitting and Data Standardization

In this research, the ship stranding of the Panama Canal is selected as the research basis for the teaching of journalism theory traceability. In terms of spatial features, it refers to the location information of the ship, the ship's body information, and information such as weather. It can be seen that there are obvious feature differences between these information, which requires normalization and quantification of the features. Like the ship's location information and weather information, these features are not of the same order of magnitude. If the normalization process is not performed, this will cause the problem of uneven distribution of weights, and will also lead to a decrease in accuracy. From the above description, it can be seen that the normalization of input data helps to improve the extraction of news theory spatial information.
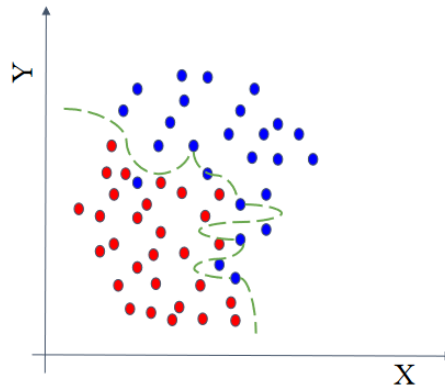

Figure 3: The method prevent overfitting.

The Figure 3 shows a schematic diagram to prevent overfitting. Due to the relatively large continuity and relevance of the time characteristics of news theory, it is necessary to prevent the occurrence of overfitting in the training phase. If the over-fitting phenomenon cannot be prevented well, it will limit the generalization ability of the model. For example, this neural network model can only predict ship stranding news events and cannot be generalized to other types of news events. However, in the actual tracing teaching of news theory, the types of news are complex and changeable, which can ensure that students have a deep grasp of the methods of tracing news theory. In order to better show the model in other types of journalism theory traceability teaching, the model used in this study has been used to prevent overfitting.

4   RESULTS AND DISCUSSION SECTION

4.1 The Accuracy of the Analysis Model in Extracting the Spatial Features of News Theory

This research mainly discusses the spatial characteristics and temporal information characteristics of neural network model in extracting news theory traceability teaching work, and the news event of ship stranding is the research object. For the extraction of spatial features in the teaching of news theory traceability, the Figure 4 shows the difference curve between the prediction error and the mean value of the ship grounding news event under different conditions. The true value is the relevant spatial information derived from the new media platform, and the predicted value is the spatial information of the ship stranded. In general, the convolutional neural network is more suitable for the extraction of spatial information in the teaching of journalism theory traceability, and the prediction values of features such as position information, ship information, and meteorological information are relatively small, and the maximum is only 2.46%. The error

distribution is also relatively uniform, and they are basically distributed on both sides of the mean straight line, which shows that the multiple spatial features of news information have a large correlation, and the influence weights are basically the same.
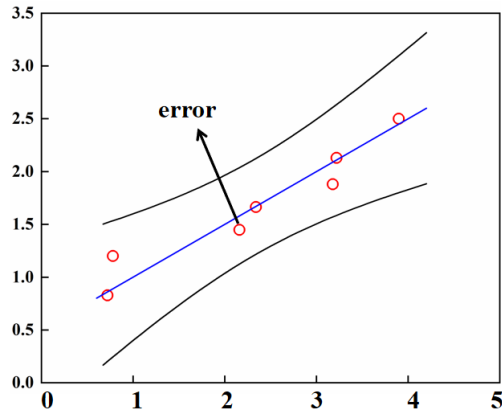

Figure 4: The news error distribution difference between error and mean.

The Figure 5 shows the error of the predicted value of seven different spatial characteristics of the ship grounding news event.
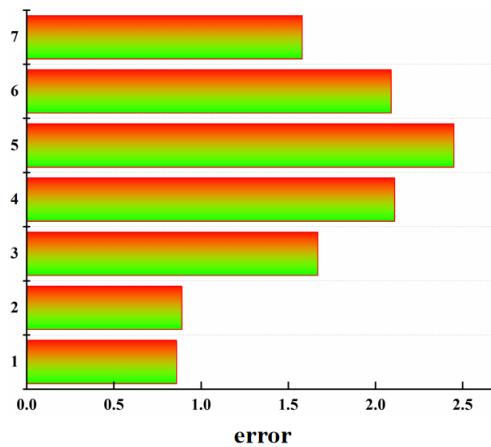

Figure 5: The errors of 7 different news space features.

These seven spatial features refer to the spatial feature information that news events pay more attention to, such as location, body form, weather and other information. The true value is derived from the relevant news information of the new media platform, and the traceability teaching work of news theory is searched for in this way of finding relevance. In general, the convolutional neural website can better map the news events of the computer-aided design system and the news events from the new media. Generally speaking, the errors of prediction are all within the acceptable range of journalism theory teaching work, so the errors are all within 2.5%. The largest error is only 2.46%, and the smallest error is only 0.86, which is a very small error. Within this error range, the model has enough confidence that it can quickly match the appropriate spatial characteristics of the new media platform based on the news theory events on the computer-aided design system, which will help students and teachers to develop the tracing work of news events more deeply. Once accurate news space information is obtained through this model, students can

learn visually through the computer-aided design system. The relevant news space characteristics derived from the new media platform are more vivid and specific.

4.2 Analyze the Time Characteristics of News Events in Computer-Aided Design Systems and New Media Platforms

The traceability of news theory has obvious time characteristics, and the occurrence of news is based on the accumulation of time. It is particularly necessary to extract and predict the time characteristics of news events. If the news time information in the computer-aided design teaching management system can be extracted, and the time-related information of the new media platform can be mapped according to these characteristics, this is a meaningful work for improving the teaching of news theory tractability. The Figure 6 shows the predicted value of different types of time characteristics of the ship stranded news time and the value of the new media platform. On the whole, the forecasting trend satisfies the teaching tractability work of journalism theory well. In the early stage of a news event, there is a big difference between the forecast error and the forecast trend, but with the accumulation of time and the progress of the news theory teaching class, the forecast error is more consistent with the trend. At the same time, the error of the forecast value of news theory in different time periods is within an acceptable range. Whether it is the value of news theory or the trend of news events, the neural network model can be confident enough to complete the prediction of the teaching task of tracing news theory.
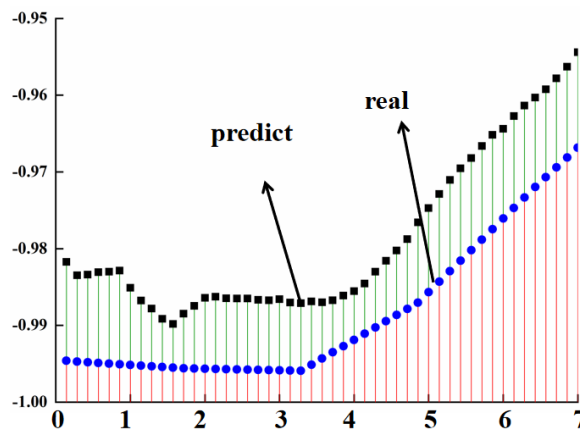

Figure 6: Computer-aided design and forecast value of news time characteristics of new media.

In order to more intuitively show the difference between the news information value of the computer-aided design and the new media news information value, the comparison error image is selected for analysis, as shown in Figure 7. It can be clearly seen from Figure 7 that the time information of the news theory is more consistent with the time information value of the new media, but the predicted value is obviously too large. But this error is completely acceptable in the teaching of journalism theory tractability. Whether it is a larger value or a smaller value, the predicted trend is more consistent. In a certain sense, news information from new media meets the time characteristics of computer-aided design news teaching work, and within 2% of the error range is not enough to apply news theory to the tractability teaching work. At the same time, the average value of the predicted value is basically located in the center of the box, which is beneficial to the dynamics of news events. Once the time information characteristics of news events are mapped on the new media platform, this will improve a large amount of accurate reference information for the tracing of news theory.
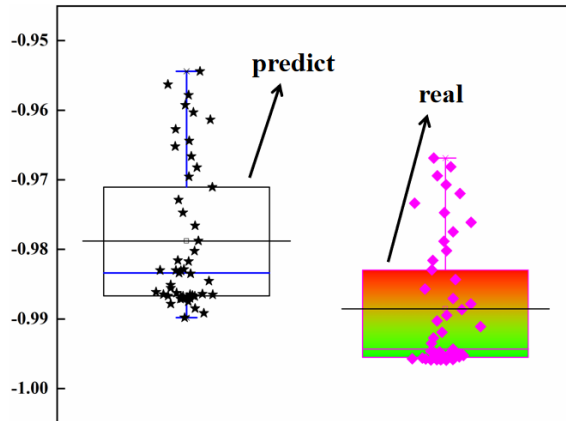
Figure 7: The box distribution diagram of the predicted value and the new media value.
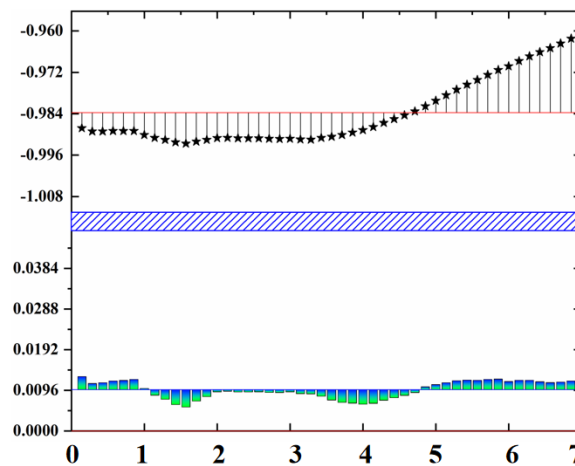

Figure 8: The distribution of mean value and minimum value of the forecast value of news time characteristics.

The Figure 8 shows the distribution of mean value and minimum value of the forecast value of news time characteristics. It can be clearly seen that the error fluctuates around the minimum value, but the fluctuation range is relatively small. At the same time, the predicted value fluctuates around the mean, but the difference is relatively small. The above conclusions can further illustrate that the time feature value of the news theory tractability of computer-aided design is in good agreement with the feature value derived from the new media platform.

5 CONCLUSION

Although the computer-aided design system has brought new ideas and better classroom effects to the teaching of news theory tractability, this method lacks a certain degree of real-time and intelligence, which limits the further development of the teaching of news tractability. However, new media technology has been rapidly developed in recent years, and the development of these big news data has brought new ideas for the tractability teaching of news theory. This paper

combines the ship stranding news event as the research object, and uses the neural network method to extract the spatial and temporal characteristics of the news event. In terms of the location, ontology, weather and other spatial factors that news events are concerned about, the convolutional neural network has enough confidence to match the relevant news spatial feature information from new media platforms in real time, which is useful for the tracing teaching of news theory. The job is very beneficial and can provide information such as location and weather. At the same time, the maximum error is only 2.46%, which is a sufficiently convincing error. From the perspective of the time information of news events, the news value of the computer-aided design system is in good agreement with the time information characteristics of the new media platform, whether it is the forecast value or the news trend that changes over time. For the prediction of the traceability time characteristics of the news theory of computer-aided design, the error is controlled within 2%, which is sufficient for the tractability teaching work of the news theory.

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