Research Article

Application of Big Data Technology in News Media Scene Visualization Based on Internet of Things (IoTs)

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The rapid development of information technology has made people quickly enter the data era, and the big data era has made visualization technology that can process and analyze data with more and more attention. At present, most of the data news visualization explorations of domestic network media remain at the level of static infographics. The Data News and Visualization Laboratory of New Media has developed a series of visual news works displayed in the form of interactive dynamic graphs. This article will discuss the application scenarios, technical architecture, and key technologies of the Internet of Things in news media through the analysis of the correlation between the Internet of Things and news media.

1. Introduction

Visual information is one of the main channels of human information sources, as shown in Figure 1. Regarding the definition of visualization, the American scientist Bruce McCormack first stated the goal of scientific visualization in 1987: "The use of computer graphics to create visual images that help people understand the intricate and often large scale of scientific and technological concepts or results. Digital representation: in the early visualization technology, it was mainly used in the fields of medicine, physics, meteorology, aviation technology, etc., so it is also called scientific visualization technology [1–3]. Visual journalism applies cross-field and cross-industry science and technology to news. It is a boon not only for practitioners, but also for the dissemination of visual news content itself, as well as for the audience's reception and understanding of news.

With the development of science and the advancement of smart device technology, visualization technology presents another form in the scene era, that is, information visualization. In 2010, the National Science Foundation of the United States pointed out in the "Scientific Computing Visualization" report: visualization is one of the tools that

can process massive data, which enables researchers to dig out the hidden information in the data and find out the laws reflected by the information and to raise awareness of massive amounts of data. Later scholars emphasized the processing of complex information or content, showing the cause and effect, development process, or trend of the entire event in the shortest time and in the most accurate way [4–6]. The key is that the information is the main body. Supported by visualization technology, data and information are presented interactively in modern means [7–9]. From the above definition, it can be found that when visualization precedes nouns, such as visualization technology, it refers to adjectives that modify nouns, while information visualization is a verb, including a process from invisible to visible [10–13]. In terms of scope visualization, the scope of the front is wider than that of the visual post, which mainly emphasizes the process and presents the results [14–16].

Visualization is essentially the theory, method, and technology of using computer graphics and image processing technology to convert data into graphics or images and display them on the screen and interactively process them [17–20]. The application of visualization to the field of news communication mainly refers to the way of using
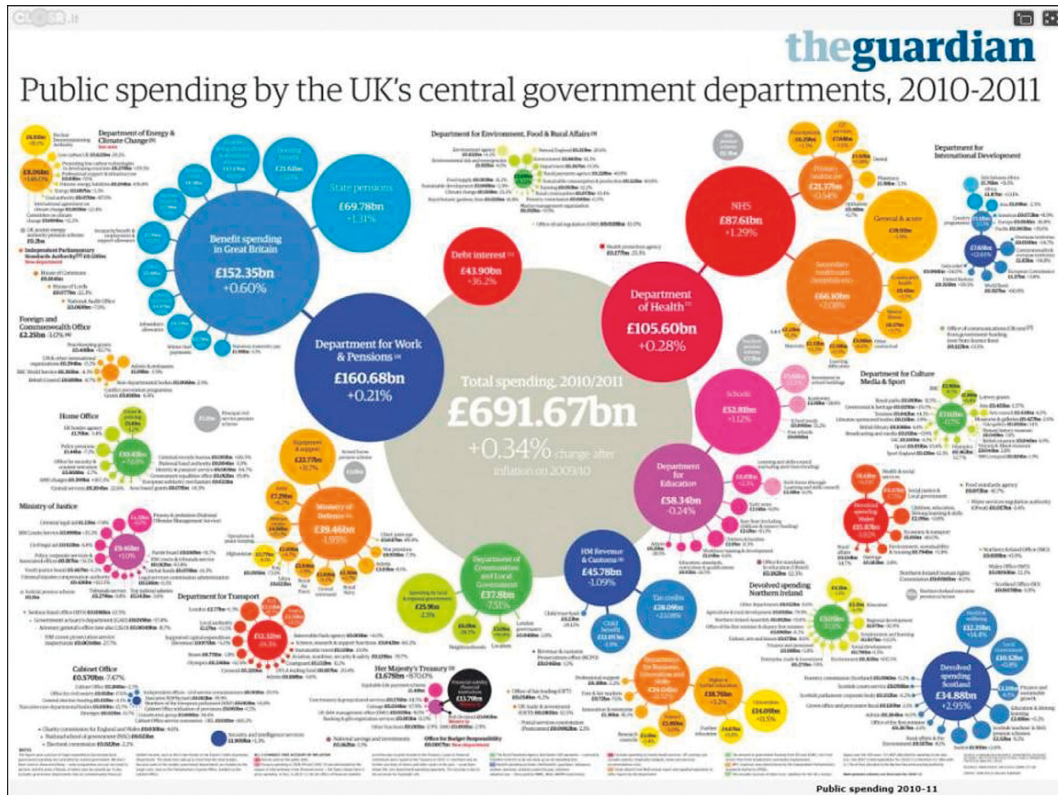
Figure 1: Visual information.

various dynamic or static infographics to convey information to the audience in news reports. With the development of data news, data visualization has become an important part of data news, which is used to display the data information of multiple dimensions behind news events so that people can understand the information and the relationship between them more intuitively, and discover its information contained in the back [21, 22].

Visual data journalism is the application of the concept of visualization in the field of news, in other words, data journalism. Visualization technology is to present data as very intuitive graphics to help readers better understand and remember. There are currently three main branches of visualization for information dissemination: information visualization, scientific visualization, and visual analysis. Among them, scientific visualization is mainly used to process scientific data, such as medical data and geographic information, which is relatively common in the field of natural science; visual analysis is based on visual interactive interface for analysis and reasoning, including comprehensive graphics, data mining, and human-computer interactive technology [23, 24].

The main forms of data journalism include interactive charts and static infographics. Interactive graphics are completely dependent on the Internet, and only became popular with the popularity of the Internet. Interactive charts are cooperated by designers, editors, and programmers to realize data visualization on web pages through programming. Users can add or filter the displayed content or perform visual analysis. The purpose of this paper is to present the visualization in the same scene by plane visualization.

The Internet of Things (as shown in Figure 2) refers to relying on radio frequency identification (RFID) technology and equipment to connect and communicate with the Internet according to the agreed protocol, and use computing facilities and software systems for information processing and knowledge mining to realize intelligent identification and management of item information [25]. From China to countries around the world, the development of the industry based on the Internet of Things is in full swing. In November 2008, IBM Corporation of the United States first proposed the concept of "Smart Earth" using the Internet of Things, and countries around the world put forward the new concept of "Smart Nation" on this basis. In February 2012, the Ministry of Industry and Information Technology of China released the "Twelfth Five-Year Plan" for the Internet of Things, proposing to accelerate the construction of "smart cities" centered on Internet of Things technology and applications. Data shows that the market size of China's Internet of Things industry has reached 365 billion yuan, an increase of 38.6% over 2011. It can be said that the Internet of Things technology has entered a period of large-scale development, and the concept of the Internet of Things has gradually penetrated into people's livelihood. Professor Li Yuanshu, a famous speaker, once pointed out that the mode of production is the fundamental condition that determines the emergence and development of news and communication. As the third wave of the information industry revolution, the Internet of Things technology has far surpassed

FIGURE 2: The internet of things.

the popularization of computers and the application of the Internet. The Internet of Things technology will surely lead to great changes in the media industry. It can be said that, in the Internet of Things era, the first with the introduction of the Internet of Things into the media will be able to seize the opportunity in the future competition in the media industry.

The Internet of Things makes media communication truly two-way interaction, and the audience is not limited by time, place, equipment, and services, and can freely choose as they wish. For people in the news media industry, their omni-media execution skills should be improved as soon as possible. The news gathering site needs to leave omni-media news materials for TV, mobile newspapers, websites, videos, newspapers, and other channels. At the same time, an omni-media news content service platform is needed to support the rapid release of personalised media products with diverse needs. All-media editing and resource intelligent sharing will save a lot of human and material resources, intelligently differentiate expressions through the characteristics of each media, and provide audiences with focused services, so as to meet the diverse needs of audiences and open up new areas of the media market. Use mixed reality immersion and natural interactive experience to enhance users' perception of visualization. The efficiency of planar and immersive visualization is different when performing different visualization tasks.

In June 2013, Caixin Media decided to step up its efforts in data journalism and visual reporting. At that time, on the one hand, reports on big data were overwhelming, but the cases reflected in the reports were often statistical old wine in new bottles, and there were very few big data application cases involving specific industries. In the international news industry, there are endless references to data news and structured news, and the concepts of data news and visualization are gradually becoming clearer through different forms such as infographics, map presentation, and news event timelines.

In order to clarify the connotation and extension of data journalism, Caixin Media has successively invited professors from Peking University and Guangzhou Academy of Fine Arts who are engaged in data visualization research to give lectures to all editorial and management employees. Caixin Media also sent its own Editors, reporters, and technicians who participated in the data visualization teaching seminar at Zhejiang University and the training workshop on data news visualization at Sun Yat-sen University in Guangzhou. In mixed reality scenarios, the integration of planar and immersive visualization can give play to the advantages of both sides.

Through knowledge transfer in academia, combined with Caixin Media's own reports, Caixin Media began to experiment with data journalism and visual reporting in August 2013. In October, the Caixin Data News and Visualization Laboratory was officially established, and the Caixin "Digital Talk" column was launched simultaneously on the Caixin website to conduct experiments in related fields.

The publishing platform of Caixin's data news and visualization products is Caixin.com. Caixin.com is China's original new financial news media, with 12 million unique visitors per month and over 100 million page views. It has loyal professional readers in the domestic political, financial, and business fields. The strategic cooperation with Tencent has also enabled Caixin. The best news reports on the Internet can get the widest dissemination.

The Caixin Media Data Journalism and Visualization Lab includes reporters, editors, program developers, and designers, consisting of 6 fixed members. When news events occur, with the deepening of news content, Caixin Media's other editors, editors, designers, and the technical team will also be involved in the development.

According to Ren Yuan, program developer of the Data News and Visualization Laboratory of Caixin Media, four fields of interactive advertising, Internet products, exhibitions, and media in the domestic interactive industry are more or less affected by data visualization, and they are all in

the domestic interactive industry, developing with their own characteristics. Only with the three elements of necessity, dissemination, and openness can a visualization work have the greatest impact, so that more people can understand the importance of visualization. The news content most has the above three elements: the necessity of news is reflected in the fact that people have active demand for news, especially financial and political news, unlike advertising that requires users to find ways to passively accept it; news content in newspapers, magazines, the Internet, and the dissemination of TV is self-evident, but it will be weaker in terms of exhibition and display; openness is reflected in that all the content and data of news are public, but for most Internet companies' non-public data, the disclosure of news content data occupies a great advantage. Therefore, in the era of graphic information, news visualization is the easiest way to reflect the importance of visualization and the most effective form of communication.

2. The Technical Architecture of the News Media Internet of Things

The technical field of news media Internet of Things can be divided into four systems: perception layer, network layer, information processing layer, and application layer, as shown in Figure 3.

2.1. Perception Layer.
The perception layer mainly realizes the recognition and perception functions of objects, mainly including various sensors (including card readers), which use sensors to obtain physical images or coded images, and realize the collection and transmission of object information data. The main technologies include RFID, sensors, GPS, scanning, barcode, and QR code.

2.2. Network Layer.
The network layer is mainly completed by the national public transmission network to upload the perception layer data and issue the control data, which can be transmitted by cable TV network, mobile communication network, Internet, short-distance wireless transmission, etc. The main technologies include RJ45, 3G (CDMA2000/TD-SCDMA/WCDMA), 4G (TD-LTE), and short-range wireless communication (WiFi, ZigBee, and HomeRF).

2.3. Information Processing Layer.
The information processing layer is mainly composed of various large-scale information service platforms. The platform is an information processor related to the perception terminal, which is mainly responsible for the decomposition, combination, and intelligent release of all media data. Here, the concept of an omni-media news content service platform is proposed, which is responsible for multi-channel fast collection, omni-media multithread processing, and distribution of news omni-media information through various channels. The main technologies include: big data reading, intelligent search engine, middleware system, intelligent processing algorithm, and cloud computing technology.

2.4. Application Layer.
Realize various applications of the Internet of Things for news media, including multimedia communication, e-reading, social education media, smart home, smart audio and video, Internet TV, 3D printing, tablet technology, and mobile terminal system application development technology.

For the professional field, the news media Internet of Things must have an information service platform suitable for media intelligence and ultra-fast dissemination in the new era. It mainly includes two major sectors: cloud storage of all media content and business intelligence cloud management, as well as the corresponding external devices and application platforms at both ends. Rich visual experience enables the audience to get closer to the facts and understand the development of events more truly, grasp the key points of the news in time, and accept the meaning that the media want to convey.

The information platform of the news media Internet of Things requires diverse and barrier-free information collection channels, and also needs to decompose the information, and then distribute it on demand after reorganization. Therefore, the acquisition and decomposition module in the cloud storage sector is particularly important. Through the Internet of Things, information collection and collection can be carried out anytime, anywhere, using any device, and through any transmission channel. Then, the news content will be automatically or semi-automatically decomposed into four dimensions (i.e., text, pictures, audio, and video) and stored.

Since the information data will be swarmed without barriers, the amount of information processed by the platform will greatly exceed the terabyte scale. Currently, the relatively mature big data storage technology will be applied to the service platform. "Big data" is a data set with a particularly large volume and a large number of data categories, including both structured data (databases, logs, SQL, etc.) and unstructured data (social media posts, sensors, and multimedia data), so these datasets cannot be crawled, managed, and processed with traditional database tools. For big data storage Hadoop is an open source distributed computing platform that provides a way to build a platform that consists of standardized hardware and forms clusters capable of processing big data requests in parallel. Hadoop's distributed file system has the ability to store very large files across multiple members of the cluster, through which multiple copies of data blocks are created and then distributed across computer nodes throughout the cluster, which provides convenient, reliable, and extremely fast computing ability. At present, major information technology companies have also launched their own mature big data storage solutions such as IBM, Amazon, Intel, VMware, and EMC. This not only achieves low-cost hardware, low-cost software, and low-cost operation and maintenance, but also makes it possible to process and utilize big data.

The omni-media news content service platform has heterogeneous resource information at the big data level. It will be called for applications in various fields and various transmission channels. A field-oriented intelligent search

Figure 3: News media Internet of Things.

engine is an essential key technology. Although the technology is currently in use, it is not very mature, and its principle is briefly introduced here. Intelligent search can also be said to be a topic search technology. At present, more research is on semantic search. This technology combines the semantic web and search engine technology to see the essence through the appearance of fonts, and accurately captures the real intention behind the sentence entered by the user. And use this to search for more accurate search results. For example, enter "pleasant scenery" and the search results will return pictures and videos of "pleasant" emotional mirrors instead of indexed resources with the entered word. Knowledge base is the foundation and key of semantic search engine's reasoning and knowledge accumulation, and Ontology is the foundation of knowledge base. In general, an ontology provides a set of terms and concepts to describe a domain, and a knowledge base uses these terms to express the facts about the domain. At present, two ontology representation methods are widely used, one is the traditional four-element representation method, and the other is the newer six-tuple representation. The former has a relatively high recognition in the world, but the form is too flexible and difficult to grasp. The latter has been welcomed by the majority of domestic researchers because of its standard definition and strong operability. The basic idea of the six-tuple notation is to use a six-tuple to represent an

ontology. As can be seen, visual news is not only the necessary reform and production of traditional media itself, but also the inevitable stage of audience demand and technological progress.

3. Visualization Methods

For the scene and vision emphasized in the scene era, 2D animation and 3D animation can better achieve scene reproduction and better visually attract audiences. The media of animation news are mainly mobile phones, TVs, computers, and other intelligent terminals, but relatively for visual news presented graphically, animation news takes a long time and costs a lot, and it is difficult to keep up with the short-term hot spots. 2D animation is two-dimensional animation. This form of news mainly focuses on popular science and policy interpretation. Popular science is mainly aimed at disease prevention or a brief introduction to a physical or chemical phenomenon, news rumors, etc. For example, in some hospitals and media cooperation activities, news content of popular science is often broadcasted; policy interpretation mainly reflected in my country is important. For example, in 2017, People's Daily used "Rong Xiaowen Animation News" to answer the news of the two sessions. The cartoon image of "Rong Xiaowen" was dressed in formal clothes in the cartoon to

interpret the current affairs reports. It was also the first time that People's Daily used it. The fixed cartoon image tells about the video fusion column of the two sessions. Each episode of the video is about 3 minutes. The two-dimensional animation can make it easier for people to understand and pay attention to the two sessions, and young people will also be attracted. The use of 3D animation in the news makes the character image and scene restoration closer to reality. Animation is a cartoon depiction of life that is de-complicated, while 3D is more like a high degree of simulation of life and a high degree of restoration of the scene . Whether it is 2D or 3D animation news, the purpose is to achieve visual restoration and attract audiences. Finally, the same visual scene is presented, and a multisource fusion visualization space is established.

At present, Apple News in Hong Kong, Beijing News, etc. mainly use 3D animation to restore the scene and simulate the scene, but also add 2D content to the news. On August 28, 2017, the Beijing News Dongxin pushed a message on its official WeChat account, including four news items, among which the two-dimensional animation "Tanabata cruelty to dogs, lonely people should be damned has scientific basis." 22 and 3D dynamic news "Uncover the secrets of psoriasis groups, stretch one's sleeves and shed skin and get sick like ants crawling all over the body" is an original, while news about psoriasis is based on modeling the image of a "person" and according to the real proportion of the person Do, the surrounding environment is also highly similar to real-life houses. In fact, in online virtual games, this mode has been adopted for a long time. Cross-fire, CS, racing, etc. are all scene reproductions built by 3D animations, but in the field of news, they are still relatively new due to technical and successful problems. In addition, the micro-animation pushed by People's Daily on March 13, 2018: when the supervisor met Sun Wukong, he used the tone of Sun Wukong to reveal that "he" had done "illegal" things, and used some examples in Journey to the West to point out Negligence of duty and power rent-seeking are all illegal, creative, and lively. It can be seen from these cases that for text and pictures, the visual impact brought by animation can also be recognized by the audience in the scene era.

The display is divided into physical pixel (Physical, P) and logical pixel (Device Independent, DI), two pixel descriptions, the display displays graphics in the form of logical pixels. A physical pixel is the smallest physical component in a display device called a physical pixel. A logical pixel is an abstract point in a computer system. This point is a virtual pixel, which can be represented by a physical pixel greater than or equal to 1, and converted into a physical pixel by the relevant system. The pixel ratio (Ratio, R) is the ratio of physical pixels to logical pixels of a display device:

$$\text{Pixel}_R = \frac{\text{Pixel}_P}{\text{Pixel}_{DI}}. \tag{1}$$

The relationship between the display physical length (Display Physical, DP) and the display physical pixels (as shown in equation (2)): the display physical length is the
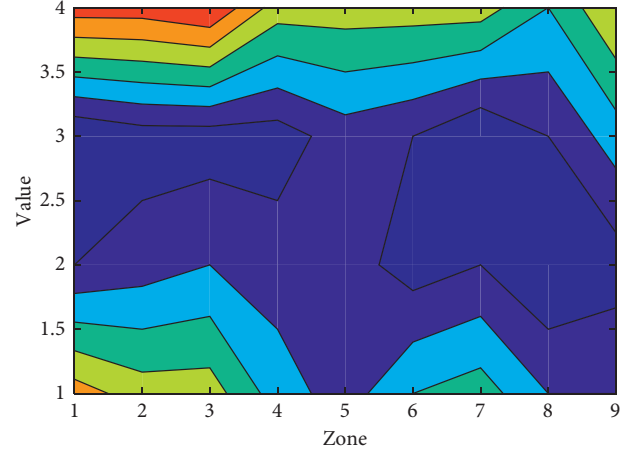

Figure 4: Predicted value.

length of the display in the physical world; the single physical pixel length (Single Physical Pixel, SPP) is the display physical length; the ratio of the length to the number of physical pixels in the length direction of the monitor (Number of Physical Pixel, NPP). The predicted value is shown in Figure 4. Visual news applies cross-field and cross-industry science and technology to news, which is not only a boon for practitioners, but also a great progress for the dissemination of visual news content and the audience's reception and understanding of the news:

$$\text{Length}_{SPP} = \frac{\text{Length}_{DP}}{\text{Length}_{NPP}}. \tag{2}$$

The relationship between the pixel unit length of the plane coordinate system (Plane Coordinate System, PCS) and the unit length of the world coordinate system (World Coordinate System, WCS): the length of the graphics plane coordinate system is the number of physical pixels in the length direction of the display, and the length of the graphics world coordinate system is the number of pixels in the world coordinate system. The length in the length direction l: in the coordinate system, the unit of this length is meters:

$$\text{ength}_{WCS} = \text{Length}_{PCS} \cdot \text{Pixel}_R \cdot \text{Length}_{SPP}. \tag{3}$$

Suppose a point a on the plane, the difference between this point in the plane coordinate system and the X coordinate of the feature map is shown in formula (4). The difference between this point in the plane coordinate system and the y-coordinate of the feature map is shown in formula (5):

$$x_e = x_a - x_p, \tag{4}$$

$$y_e = y_a - y_p. \tag{5}$$

There is a translation relationship between any point on the web end plane and the position of the feature map, and the translation matrix T can be obtained from formulas (1), (2), (4), and (5) as follows:
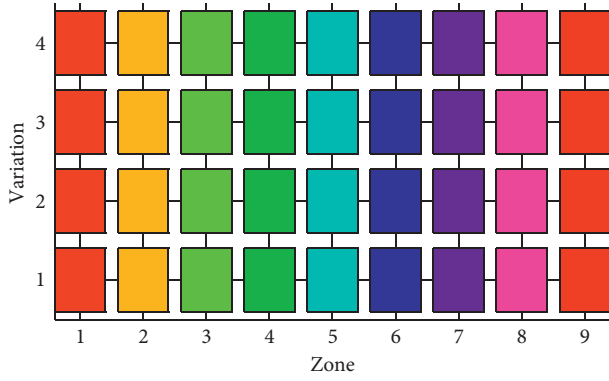
Figure 5: Variation.

$$T = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ x_e \mathrm{Pixel}_R \mathrm{Length}_{SPP} & 1 & -y_e \mathrm{Pixel}_R \mathrm{Length}_{SPP} & 1 \end{bmatrix}. \tag{6}$$

By formula (6), the position of any point a on the web end plane in the world coordinate system of the multisource fusion visualization space is as follows:

$$\begin{bmatrix} x_a & y_a & z_a & 1 \end{bmatrix} = \begin{bmatrix} x_a & y_a & z_a & 1 \end{bmatrix} \cdot T. \tag{7}$$

The three-dimensional coordinate system of the HoloLens side is first rotated according to the Z axis, then the Y axis is rotated, and then the X axis is rotated. Finally, the three axes of the three-dimensional coordinate system of the HoloLens side and the three axes of the world coordinate system are parallel to each other and have the same direction. Now, suppose that the Z-axis rotation angle is $\theta 1$, the Y-axis rotation angle is $\theta 2$, and the X-axis rotation angle is $\theta 3$. Then, the Z-axis rotation matrix R_Z, the Y-axis rotation matrix R_Y, and the X-axis rotation matrix R_x are as shown in formulas (8)–(10), respectively. The total rotation matrix R is shown in equation (11). The variation is plotted in Figure 5. The experience can make the audience get closer to the facts and understand the development of the event, grasp the key points of the news in time, and accept the meaning that the media wants to convey:

$$R_Z = \begin{bmatrix} \cos(\theta_1) & \sin(\theta_1) & 0 \\ -\sin(\theta_1) & \cos(\theta_1) & 0 \\ 0 & 0 & 1 \end{bmatrix}, \tag{8}$$

$$R_Y = \begin{bmatrix} \cos(\theta_2) & 0 & -\sin(\theta_2) \\ 0 & 1 & 0 \\ \sin(\theta_2) & 0 & \cos(\theta_2) \end{bmatrix}, \tag{9}$$

$$R_X = \begin{bmatrix} 1 & 0 & 0 \\ 0 & \cos(\theta_3) & \sin(\theta_3) \\ 0 & -\sin(\theta_3) & \cos(\theta_3) \end{bmatrix}, \tag{10}$$

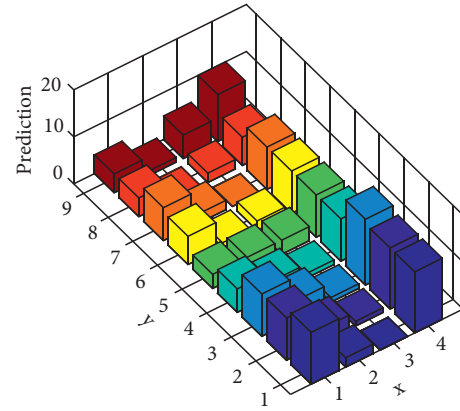$$R = R_Z \cdot R_Y \cdot R_X. \tag{11}$$

Figure 6: Prediction.

Assume that the origin of the three-dimensional coordinate system on the HoloLens side is in the coordinates of the world coordinate system, and the translation matrix T between the three-dimensional coordinate system on the HoloLens side and the world coordinate system is as follows:

$$T = \begin{bmatrix} 1 & 0 & 0 & 0 \\ 0 & 1 & 0 & 0 \\ 0 & 0 & 1 & 0 \\ x & y & z & 1 \end{bmatrix}. \tag{12}$$

Visualized data process, "A process is a series of activities carried out by an organization to meet the value needs of various stakeholders and the healthy development of the organization itself. The process expresses the dynamic behavior of an organization, showing that the organization achieves various goals and functional requirements. "Data news production is also a process, but the process of traditional news production is nothing more than planning, interviews, manuscripts, editing, and broadcasting. The production process for visual data journalism is quite different. Taking Caixin Media's visual data news as an example, Caixin Media recreates the news production process with an interactive and cooperative reporting method. The prediction is shown in Figure 6.

3.1. Visual Data News Planning Process. Planning refers to the design and planning made by the media to report specific news facts in order to achieve a certain effect. For example, on January 11, 2016, Caixin.com's visual data news: "Taiwan elections are coming, and there are still these elections in 2016". The report summarizes the elections of various countries in 2016 before the Taiwan elections, and lists the elections of a certain country every month in a timeline, which is clear and intuitive, and warms up the elections in Taiwan. There are several comments with high relevance to the report under this report, which highlights that visual data news has stronger communication and interaction than traditional media news reports. When the giant wheel of technological advancement of various disciplines in the

scene era is rolling forward, the emergence of visual news can not only find theoretical support from a theoretical perspective, but also the result of the gradual development and reform of social practice.

3.2. Visual Data News Collection Process.

News gathering is the core part of the news production process. The news gathering process in traditional news reports often involves reporters personally interviewing the involved subjects or witnesses of relevant events to obtain enough relevant information to restore the event.

The sources of visual data news are mostly professional database resources, government departments, enterprises, institutions, etc., and judge and select expressive data from these massive data. For example, "How were those vaccine cases judged? The source of the data for this report is the China Judgment Documents Network. After the media workers obtained the data, they began to screen and clean the data.

3.3. Visualized Data News Analysis Process.

For visual data journalism, massive data is just the starting point, and the more critical thing is to organize a large amount of data in order to improve the accuracy of the data, including removing interference data, cleaning up human errors, and calculating data. Only high-quality news content can occupy a dominant position in a large number of information to gain more traffic and the key.

High-quality information graphics should fully analyze and mine information data to break through the limitation that single-dimensional data can only reflect the appearance of things. After analysis and mining, some deep-level relationships within the data can be displayed intuitively through information icons, thereby realizing the secondary discovery of news. The evaluated data is plotted in Figure 7.

3.4. Visualized Data News Feedback Process.

From the Lasverde 5W model, the user's feedback process is the key link to test the communication effect. The user feedback link of Caixin's visual data news is mainly reflected in the user's instant thread comments and the cross-platform communication of the news. Superior thread comments reflect the attitudes and opinions of readers, etc. Cross-platform communication mainly refers to whether the news will be forwarded to the other social platforms. This shows that today's audience is both a personalised consumer and a personalised producer. It is not only the necessary reform and production of traditional media itself, but also the inevitable stage of audience demand and technological progress and development.

Visualized news in the scene era can also express news by live broadcast of the scene. As long as the machine is turned on, no matter where the audience is in the world, as long as there is a mobile phone and the Internet, the scene the audience sees is the live broadcast, and live broadcast has become an one of the important
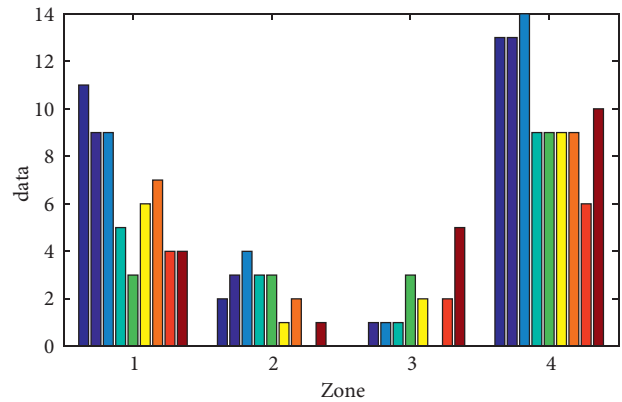

Figure 7: Data.

presentation methods of visual news. The biggest charm of live broadcast is that the audience can interact with the characters in the scene. In the early years, live broadcast was often used in important events and occasions such as the Olympic Games and National Day military parades, and the requirements for live broadcast systems, equipment, and anchors were also very high. For example, during the SARS period in 2003, CCTV News Channel did a continuous 11-day broadcast. The 26-hour live broadcast is called a news "encounter". The evaluated amplitude is shown in Figure 8.

After more than ten years of development, live broadcasting has become very easy and popular. When WiFi is widespread in public places, users can take out their mobile phones and log in to the APP to launch a "personal live show". People on the APP can see the live broadcasts of people nearby. Therefore, the company opened live broadcasts, promoted products and broadcast live broadcasts, travel tours, singing and dancing talent shows, and purchasing agents have all started live broadcasts. The steam variation is shown in Figure 9. For the media, creating a high-quality visual news product is undoubtedly the key to dissemination and a foothold in the market.

The scene era emphasizes a feeling of "being there". The live broadcast can interact with the host in real time across the space, allowing the host to shoot the environment they want to see or make corresponding actions according to their own ideas. Under the tide of live broadcasts, game anchors, entertainment anchors, and ball game anchors have been cultivated by agents one after another. When big companies also started to do related businesses, the anchors of Taobao and JD.com made a lot of money because of this. The interactive form of live broadcast has also successfully attracted the attention of journalists. Therefore, many media have tried to set up live broadcasts to send back the first live broadcast. The Beijing News, Netease News, Caijing, Caixin, The Paper, etc. have already started live broadcasts and have won. As a result, during the two sessions in 2018, many media also broadcast live broadcasts when conditions permit, which have won the attention and praise of the audience. In addition, live broadcast is an important material
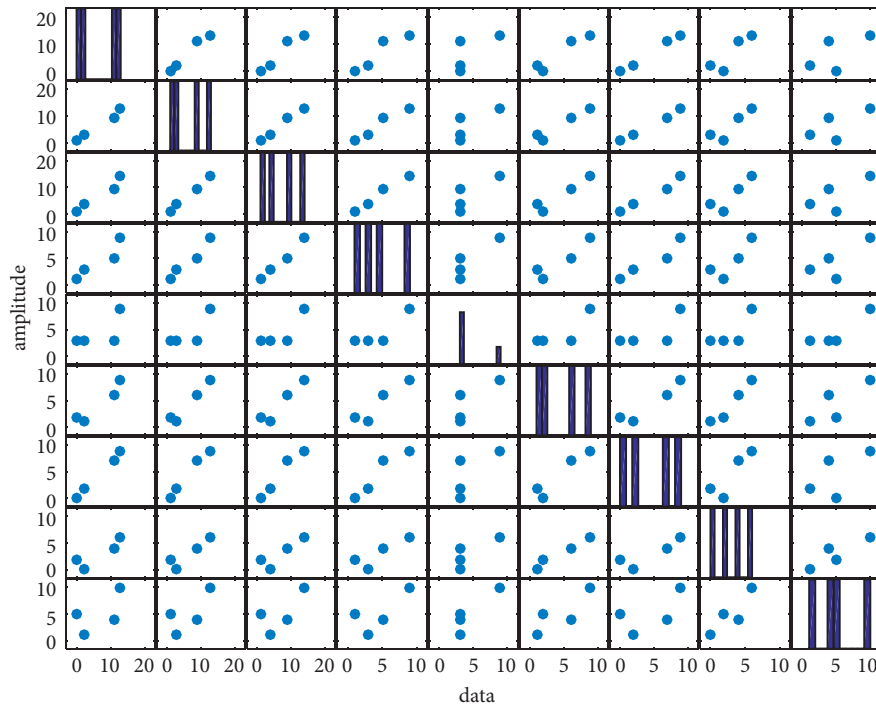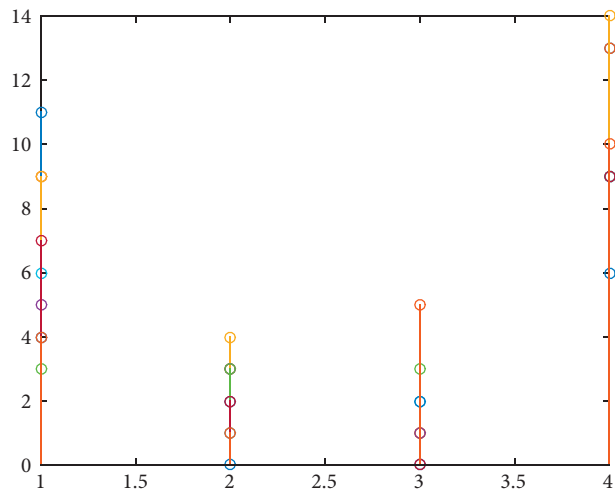
FIGURE 8: Amplitude.

FIGURE 9: Steam variation.

library for short videos. In addition to real-time scene presentation, it can also reproduce scenes. The content of many short videos comes from intercepting the most important, essential, and shocking parts of live broadcasts for editing and spread.

4. Conclusion

In this paper, the visualization method of application scenario of news media Internet of Things is analyzed. And through the image recognition positioning technology and network communication technology, the mixed reality device and the large-screen touch display device are integrated, so that the two devices work in the same space and present the same visual scene at the same time, thus establishing a multisource fusion visualization space.

Since this article only takes an example as an example, it is difficult to identify the authenticity of individual parts of the data. One of the limitations is that due to the random sampling method, the data samples of certain years are not included in the sample, so it may not be able to fully present the visual news of the year.

Data Availability

The data used to support the findings of this study are available from the corresponding author upon request.

Conflicts of Interest

The authors declare that they have no conflicts of interest or personal relationships that could have appeared to influence the work reported in this paper.

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