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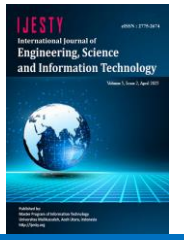

Artificial Intelligence in Film and Television Production: Idea Generation and Post-Production

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Abstract

This paper takes the impact of artificial intelligence on film and television art creation as the topic, from the creative generation of film and television art creation and post-production, two aspects of the impact of artificial intelligence on film and television production. The impact of artificial intelligence on film and television production for a more in-depth discussion and research, combined with examples of research and analysis, the use of science and technology point of view theory of film and television art creation in the new era of the artistic impact of the presentation of a specific description. Through the study, artificial intelligence plays a pivotal role in the process of film and television production, from pre-planning to script writing to later video editing and special effects production. The successful use of artificial intelligence in the field of film and television art creation has a great impact on the overall value chain involving the film and television industry, which is of great social significance.

Keywords: *Artificial Intelligence, Film and Television Production, Creativity, Post-Production.*

1. Introduction

Artificial Intelligence (AI) is an important and indispensable driving force in the development of mankind and society, like a brand new material and technological fuel, which contributes to the vigorous development of society and the ever-increasing material and cultural needs of mankind. Since the 21st century [3], AI has been widely utilized, and the scope of AI has been gradually broadened and has been involved in the practice of many fields, including film and television, medical care, financial services, and public services, which have greatly impacted the lives of the public life [1][2].

Artificial Intelligence is no longer limited to general work areas, and some creative work areas have been heavily incorporated with AI elements. In Figure 1, the global and Chinese AI industry size from 2018-2022 is given. From the figure, the global and Chinese AI industry has increased substantially, and the market size has increased by more than three times relative to 2018 [4][5][6]. The artificial intelligence industry has great potential. In the film and television production industry, there are traces of the involvement of artificial intelligence elements in the conception of creativity, script writing, cast comparison, mid-shooting, and post-production. The rapid development of artificial intelligence has both opportunities and challenges for the entire film and television industry [7][8][9]. The changes brought by AI to the creative work field have greatly transformed the ecology of film and television art practitioners and the industry value chain. However, as far as the overall effect is concerned, it is necessary to further increase the intensity of the development and management of AI technology in order to make the presentation of film and television artistic creation more accurate and specific.

The application of artificial intelligence technology in idea generation and post-production will greatly enrich and expand the possibilities of film and television production [10][12]. First, it can understand audience preferences and market trends through big data analysis and prediction algorithms, provide more attractive materials and inspiration for creative generation, and help the production team better grasp the market demand [13][14]. Secondly, the intelligent generation and enhancement of audiovisual effects using AI technology will bring a more shocking and immersive viewing experience for film and television works and enhance the artistic value and market competitiveness of the works [11]. The following are some examples of the use of AI technology to generate and enhance audiovisual effects [15][16][17].

With the continuous development of artificial intelligence technology, film and television artistic creation from pre-text to post-production, including pre-shooting market prediction and user positioning, are assisted by artificial intelligence technology to harvest positive feedback

[18][19][20][21]. Figure 2 gives the capabilities that AI already has. From the figure, AI has strong voice-image recognition capabilities. However, the spatial logic relationship between AI in the process of film and television art creation and the philosophical and ethical relationship between AI and human subjects have become hot issues of concern for experts and scholars in the field of artificial intelligence and film and television art [22][23][24].

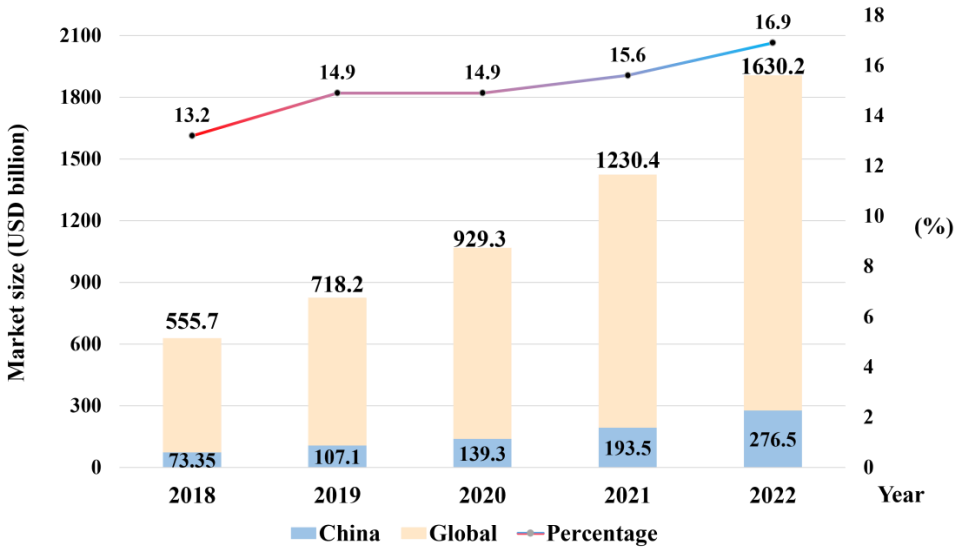

Fig 1. Global and Chinese Artificial Intelligence Industry Size, 2018-2022

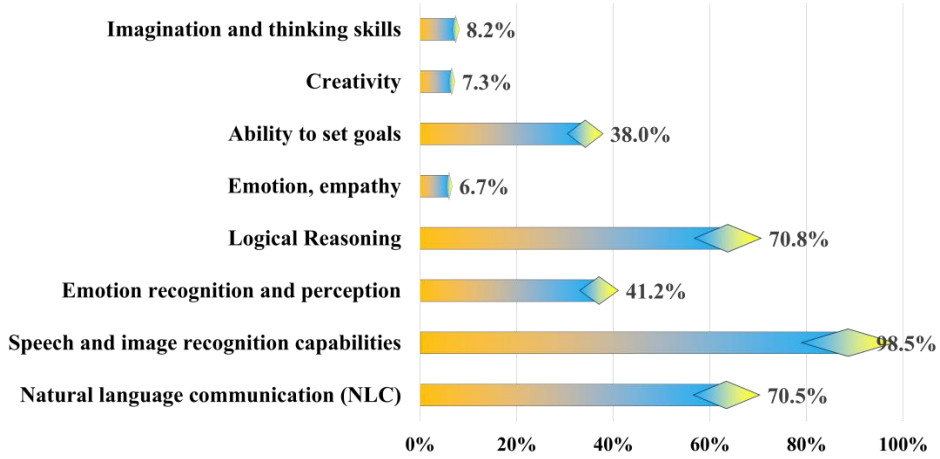

Fig 2. Capabilities Already Available in Artificial Intelligence

For the time being, the application and development of artificial intelligence is still at a relatively weak stage. Taking the human body as an example, material food is like data information, providing basic support for human survival and development; the algorithm is the human brain, providing the thinking drive for human behavioral activities; and computing power is human feet [25]. Data information, algorithms, and computing power constitute the three elements of Artificial Intelligence [26]. However, Artificial Intelligence used in the creative field of film and television art still has many problems, such as homogenization of creation, mechanization of text, and even the immaturity of the artificial intelligence technology itself, resulting in information garbled system crashes, etc., and the above-highlighted problems are still waiting to be solved

This paper takes the impact of artificial intelligence on the creation of film and television art as the theme, respectively, from the elements of film and television art creation, post-production two aspects, to elaborate on the impact of the intervention of artificial intelligence on it. This paper mainly adopts the methods of qualitative research and quantitative research and the combination of theory and practice. Through consulting academic and related authoritative information platforms, search for literature on artificial intelligence, film and television art creation, and their interactive relationship. At the same time, we review the relevant works on artificial intelligence and film and television art creation, summarize the content related to this paper, and form theoretical support. Among them, for artificial intelligence itself, respectively, from the development of artificial Intelligence, Artificial Intelligence in film and television works of image expression, artificial intelligence technology and film and television works of three-dimensional presentation perspective, multi-dimensional exposition of artificial intelligence on film and television art creation.

2. Literature Review

2.1. Idea Generation in Film and Television Production

In traditional film and television production, the methods and approaches of idea generation mainly include brainstorming, storyboarding, characterization, scriptwriting, and so on. Film and television art creation initially refers to the creation of movies alone, while movies are the seventh art that mixes a number of artistic elements [27][43]. It is a fusion of time and space, of sight and sound, and of the real and the virtual
From the pre-planning to script writing, and then from the mid-term on-site shooting (which includes several important elements such as photography, acting, art, etc.) to the late video editing, the ultimate goal is to screen. Until the last second of the movie or TV show, all of these are part of its creation, and any one of them will affect the development and change of the whole situation
The composition of the film and television industry structure is given in Figure 3 [28]. From the figure, it can be seen that the structure of film and television industry is mainly divided into film and television financing, film and television planning, film and television production, film and television publicity, and film and television distribution. In the creation of film and television works, film and television scriptwriting, story shooting, and post-production are important. Screenwriters occupy a core position in film and television artistic creation and the ecology of the film and television industry, and how to improve the quality of film and television content and the ability level of screenwriters is an important part of film and television artistic creation.

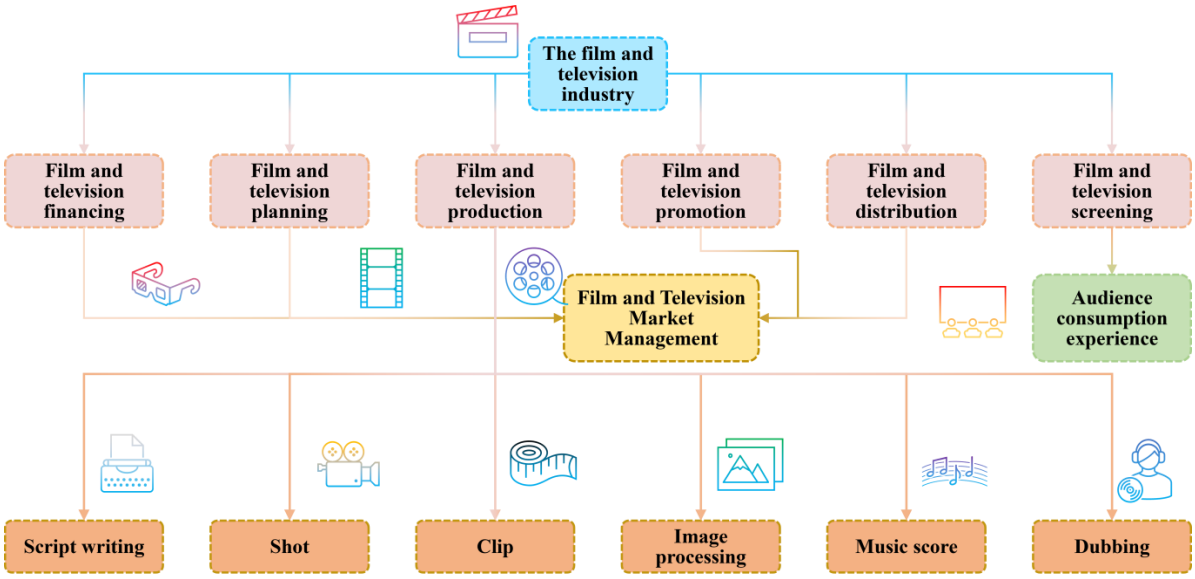

Fig 3. Film and TV Industry Operation Flow

Traditional screenwriting and creativity in film and television are influenced by the ability to create stories, to think in images, and to detect knowledge. Traditional creativity relies on the experience of the practitioner. The type of creativity relies on the subjective style of the creative team [29]. The team may think the idea is fresh and interesting. However, the creative idea may not be in line with the public's aesthetics or may deviate from the mainstream creative direction. Creative ideas become the self-indulgence of the team itself
In film and television production, artificial intelligence can be applied to multiple aspects of idea generation. Artificial intelligence idea generation is mainly in three aspects: script creation, visual effects, and post-production
In screenplay creation, AI finds a rationalized data structure representation by inputting various forms of data, text, and material related to screenplay creation. According to the type of the target script, the knowledge graph is used to construct the definition of the output structure of the rationalized representation as well as the semantic representation of the output result [30][31]. Finally, the script and storyline are optimized and analyzed and even automatically generated for creation. By learning from a large number of film and television works, AI can generate new plots, character settings, and even dialogues, providing creators with novel ideas and conceptions
Artificial intelligence plays an important role in visual special effects and post-production. Artificial intelligence can help with scene generation and restoration, character modeling design, and other tasks using image recognition and processing technology to improve the efficiency and quality of special effects production
Overall, AI technology, through big data analysis and machine learning algorithms, can analyze the preferences and behavioral patterns of audience groups and predict market trends. Meanwhile, AI in film and television production can help provide creative inspiration, optimize the production process, increase visual effects, and improve overall production efficiency. This helps creators better grasp the needs of the audience during the creative process, increasing the appeal and market competitiveness of their works [32][34].

2.2. post-production for film and television

Along with the increasingly wide variety of film and television subject matter, the role of film and television post-processing work is becoming increasingly important to post-process the finished film and make it form a complete film.
Post-production of film and television is a huge and complicated project, including editing, visual effects, sound production, color correction, character dubbing, and other aspects. Post-production usually requires a lot of human and material resources [33][42]. The traditional film and

television post-production process requires the integration of a variety of technologies and software tools to complete the post-processing of film and television works through these steps. The film and television engine processing process based on artificial intelligence is given in Fig. 4, from which it can be seen that artificial intelligence based on big data processing needs to be trained in image processing before it can be used for image processing

Artificial Intelligence plays an unexpected role in the intelligent Processing of movie graphic images, visual effect production, and intelligent editing through computer vision, deep learning, and other technologies. Artificial intelligence technology handles repetitive and regular work in the post-production process with higher efficiency, shortens the cycle and cost of post-production, and opens the door to a new world for digital acting

The current application of artificial intelligence to the post-production of film and television mainly has two aspects: film and television image processing and film editing.

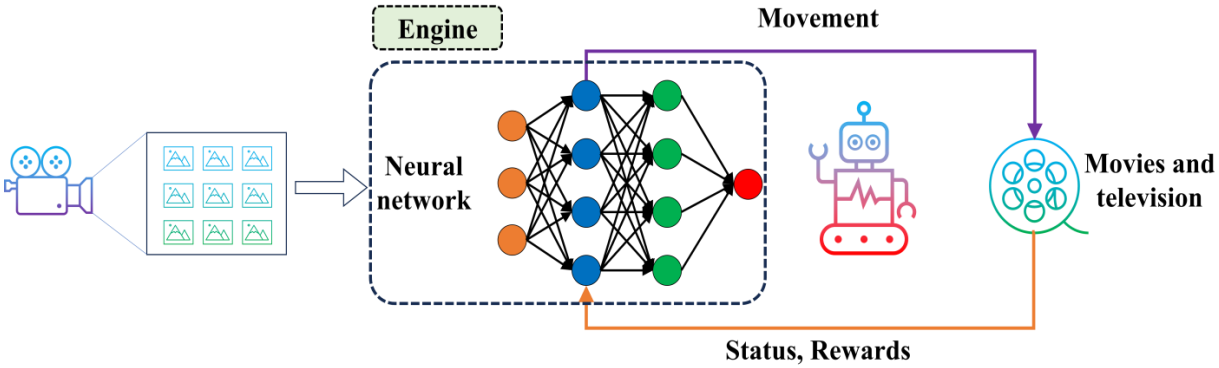

Fig 4. Artificial Intelligence Movie and TV Processing Flow

2.3. Principles of Artificial Intelligence Post-Production

In recent years, artificial intelligence post-production has been utilized mainly based on convolutional neural networks; the principle of the application of artificial intelligence in film and television post-production is shown in Figure 5. Figure 5 shows a typical convolutional neural network structure process. The process mainly has three processes: convolution, pooling, and full connection [34][35][40]. The process is mainly based on the main image input, regional feature extraction, convolutional neural feature calculation, and regional object classification in four parts to analyze the characters, scenes, dialogues, and other contents appearing in the film so as to classify these contents into different categories and then combine and arrange them through certain rules [36][41]. To realize the accurate and efficient localization and target detection of the contents appearing in film and television, it can be based on the convolutional neural network algorithm to adjust the LOSS function to achieve the improvement of object recognition accuracy.

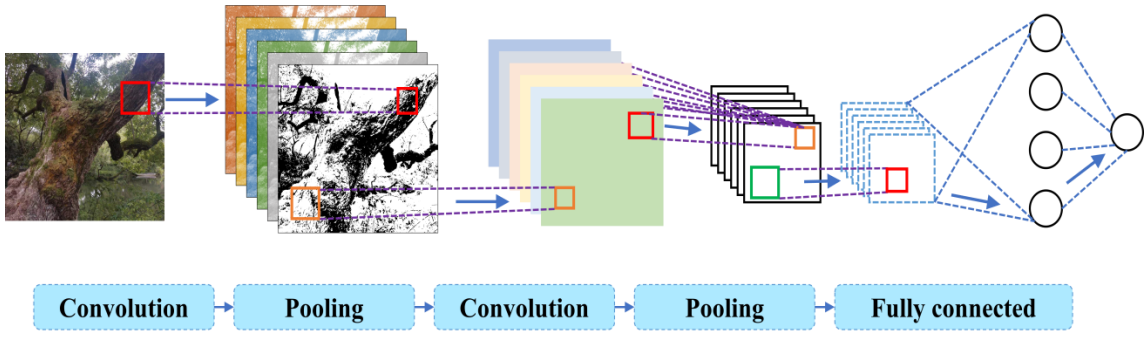

Fig 5. Typical convolutional neural network structure

Artificial Intelligence is based on its ability to learn large amounts of video and audio data so that it can understand, process, and generate similar content. In this process, AI can utilize techniques such as deep learning and neural networks to enable the analysis and Processing of video, audio, and images. Artificial Intelligence analyzes video footage through deep learning algorithms to identify and stitch together scenes that better meet the needs of viewers. Artificial intelligence can also be used for the generation and application of visual effects, synthesizing and enhancing special effects scenes in films through image recognition and processing techniques. The application of these technologies is expected to bring more innovation and development to film and television post-production [37][39]

Film and television is essentially a comprehensive art of combining vision and hearing through artificial intelligence technology on sound recognition, visual analysis, and other multimodal Processing so as to realize the characters in the film and television, lens and other screen semantics, character emotional expression characteristics, and other analysis. Artificial intelligence can give a variety of lens and scene combinations to the film and television production staff for reference after the effect of these contents, which can greatly improve the efficiency of film and television production and play a very good auxiliary effect [38].

3. Methods

3.1. Traditional approaches to film production

3.1.1. Creation of Screenplay

In traditional screenwriting, it relies on a screenwriter or a team of screenwriters working together. Most of the traditional scriptwriting is based on novels, operas, or true stories that are adapted and reinvented. A small number of scripts are based on the independent work of the director and screenwriter. This approach to screenwriting continues to this day. The risks associated with the content of the script are reduced if the traditional storytelling approach is used for adaptation. This is because novels and other series have a huge fan base. The Harry Potter series is the best example of this. However, once the script is originally written by the writer, then the creation becomes uncontrollable. Screenwriters are influenced by creativity, and once there is a lack of good creativity, then a rich script cannot be created. Even if rich content is created, the audience may not meet expectations. In short, the traditional screenplay is unable to investigate the audience's preferences and make an accurate judgment on the market.

3.1.2. Post-editing of films

Traditional film editing relies on the manual operation of the software. Changes in film editing over the years have only switched from film-based cropping to cropping using specialized computer software. When the software is used for cutting, it takes a lot of time and effort to rely on manual operation. At the same time, some of the montage shots show it in an even more maddening way. Moreover, the editing staff will only apply the tools, and the coordination of the picture relies on the director's command. This undoubtedly increases the labor cost of editing.

3.1.3. Processing of film images

In the era of undeveloped computer technology, traditional picture processing is based on special shooting methods and props to make people create visual differences to create a good effect. An example is the famous Godzilla film series. With the development of computer technology, CG technology is gradually applied. People can create visually impactful images through 3D modeling, which greatly enriches the application of film images. However, the same way of production requires a professional team to operate. It needs to spend a huge amount of money.

3.2. Artificial Intelligence Applications in Idea Generation

3.2.1. Data-driven scriptwriting

In traditional screenwriting, screenwriters usually rely on their own imagination and experience to build storylines and character development. However, the application of AI technology can provide screenwriters with new ideas and inspiration by analyzing large amounts of movie script data and market trends. By learning from historically successful movie scripts, AI can identify potential patterns in storylines and audience preferences and provide creative suggestions to screenwriters. In addition, based on natural language processing technology, AI can be used to assist in the optimization of the grammar and structure of the screenplay to improve its quality and attractiveness. The process of big data mining for film and television scripts is given in Figure 6, from which it can be seen that AI can customize scripts for creation through data positioning according to the script objectives and after-market analysis.

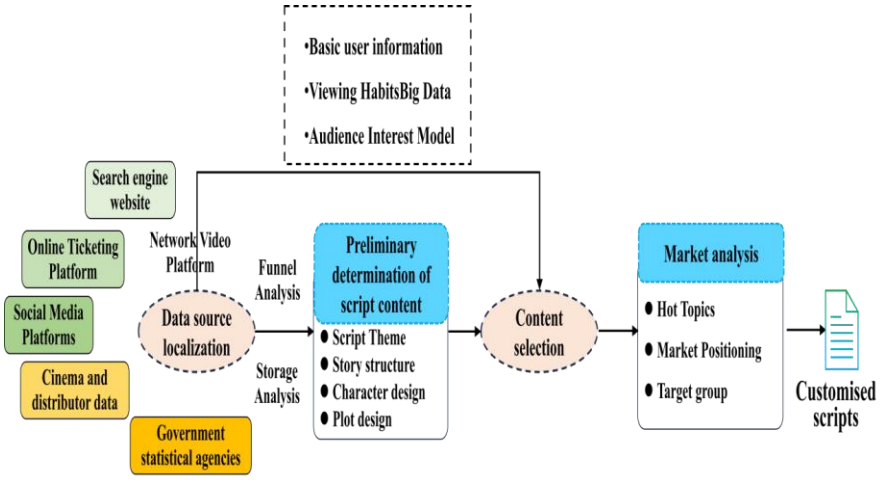

Fig 6. Process of Big Data Mining for Movie Scripts

3.2.2. Character design and casting

In film and television production, character design and actor selection are crucial aspects. Artificial intelligence can provide character design and actor selection suggestions for film and television production by analyzing a large amount of character information and actor performance data. By learning the audience's preference and the actors' performance, AI can help the production team to better portray the characters and select suitable actors

Taken together, the application of artificial intelligence in film and television creative generation has been changing traditional production methods, bringing new opportunities and challenges to the film and television industry. This change not only affects the way film and television creators create but also has a profound impact on the future development of the entire industry.

3.3. Artificial Intelligence Applications in Post-Production

3.3.1. Artificial Intelligence Movie Editing

Grouping the shot footage is an important work in post-production editing. The editing of the movie requires the editor to have rich editing experience and artistic aesthetics. At the same time, editing is a job that requires a lot of physical labor. The application of artificial intelligence technology in film editing, to a certain extent, can reduce the workload of the editor.

The principle of artificial intelligence in movie editing is shown in Figure 7. The process of graphic audio and video aggregation is given in Figure 7, in which the material library is searched, cut, and synthesized by artificial intelligence and aggregated and spliced autonomously. Artificial Intelligence through computer vision can be based on image recognition, search and extract, cut video clips containing specific keyword content, and aggregated together. This way of working largely saves the editor's time in searching and slicing the material. For example, AI is able to recognize the main characters, iconic scene features, etc., in a video frame.

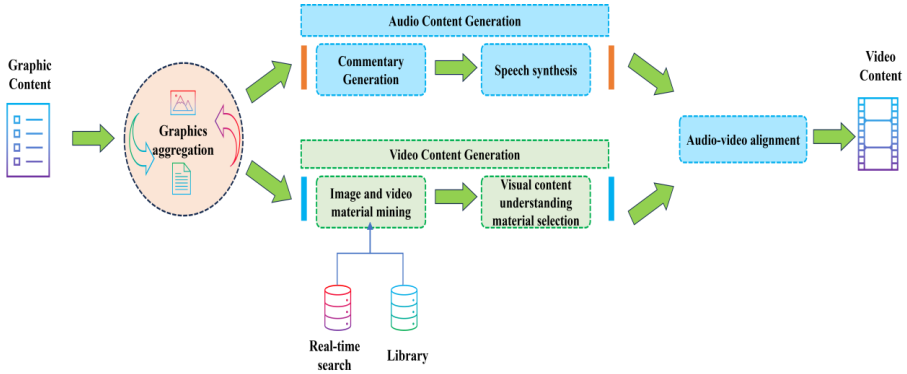

Fig 7. Artificial intelligence audio and video clip synthesis

Second, the AI system automatically organizes all the footage according to the script and understands the language of the footage and the use of the language of the footage. When the intelligent system understands the lens language, it can learn the editing rules to group the videos. By letting the machine learn the video edited by a person and learning how the person editing the video corresponds the text to the footage, it gradually improves the machine's ability to group footage automatically. Artificial Intelligence has the advantage of outperforming human beings in the automatic editing of simple videos. For example, in a program that may have hundreds of cameras recording at the same time, the use of artificial intelligence from dozens of cameras in the material to quickly find the final editing of the required footage is an extremely laborious thing. AI can quickly find footage that roughly meets the requirements and then refine it manually

This can greatly reduce the burden of manual editing and improve the efficiency of post-production.

Finally, with preset styles and habits, the AI is able to creatively automate the editing process according to specific goals based on the learned rules of shot grouping.

3.3.2. Artificial Intelligence for Film and Video Image Processing

The post-production of film and television is inseparable from the Processing of graphic images. Whether it is the editing of video images or the production of special effects, it is necessary to process the images frame by frame.

Graphic image processing is deleting, copying, coloring, and other work within the specified selection. This is not technically difficult but extremely time-consuming and labor-intensive work. For the more demanding film and television, the workload of graphics processing is geometrically increased.

The emergence of artificial intelligence technology has greatly reduced the workload of image processing. Artificial intelligence technology, through the recognition of images based on deep learning algorithms, is able to carry out batch intelligent processing of images, which can largely reduce the redundant and repetitive workload of post-production so that editors, special effects artists, and other post-production personnel will put more energy into artistic creation

The principle of artificial intelligence in image processing is shown in Figure 8. As can be seen from the figure, artificial intelligence technology first uses computer image recognition technology to transform the acquired picture information into computer language to be disseminated in the computer and then calls the relevant programs and tools to process the information. After storing the information of the read image, the important information of the picture is stylized to make the characteristic information of the picture more prominent.

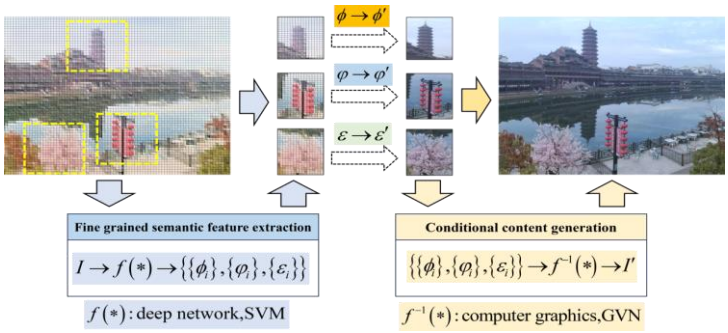

Fig 8. Artificial intelligence image video production framework

Artificial Intelligence image recognition involves the general identification of objects in a picture, i.e., identifying actors and props in a picture. Both the recognition and Processing of images rely on extensive deep computer learning and more complex algorithms.

A common AI approach is a target detection algorithm based on convolutional neural networks. In Fig. 9, the framework of the AI keying system is shown. From the figure, it can be seen the need to read the classification of objects in the image that needs to be processed and the location coordinates. Then, for the image cutting after the target recognition, i.e., the image keying, which is often needed in film and television shooting, the U-shaped convolutional neural network can be used to separate the recognized target graphics from the picture and form a new picture. For example, in the scene where the actor is shooting in the air while hanging from a wigwam, the wigwam erased image can be processed automatically.

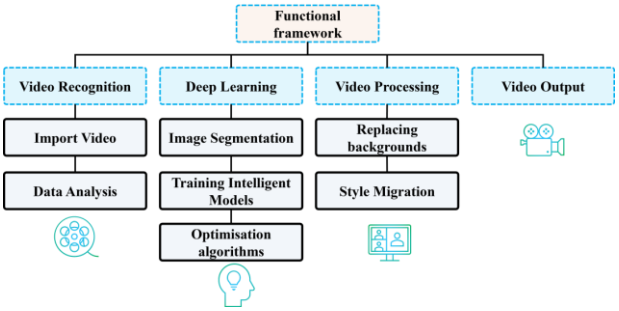

Fig 9. Framework of artificial intelligence keying system

3.3.3. Artificial Intelligence for Sound Processing and Scoring

In film and television post-production, the principles of AI sound processing and scoring involve the use of machine learning and deep learning techniques to analyze, process, and generate audio content.

For sound Processing, AI can learn from large amounts of audio data to identify and analyze different elements of audio, such as dialogue, sound effects, music, etc., and separate and process them effectively. This includes techniques such as noise reduction, reverberation elimination, and audio enhancement to improve audio quality and clarity. For soundtracks, AI can analyze the emotion, pace, and atmosphere of a film and generate music that matches the scene based on this information. This can be achieved by an algorithm that recognizes the emotional direction of the film's plot and matches the corresponding musical elements. In Figure 10, the AI speech model remodeling process is shown. From the figure, it can be seen that the target acoustic is finally formed by acoustic modeling (rough acoustic) of past speech semantic markers, followed by fine acoustic modeling, and finally, remodeling the speech based on future semantic markers

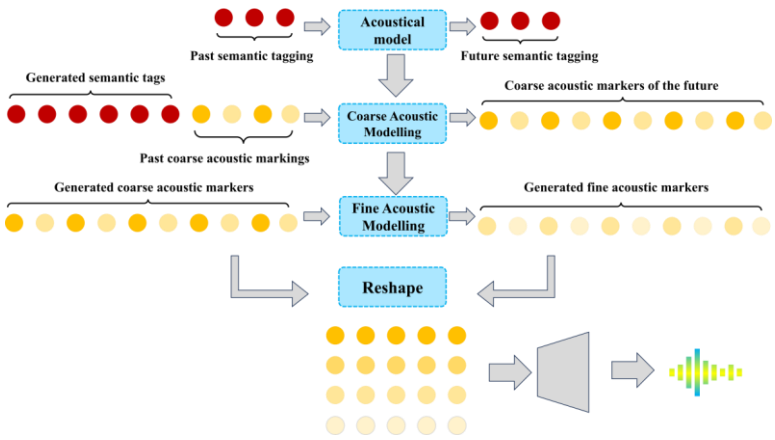

Fig 10. Artificial intelligence speech model remodeling process

4. Results and discussion

4.1. Artificial Intelligence in Script Idea Generation Applications

At present, the value of movie and television big data is not limited to the statistics of box office data, the number of clicks on online platforms, the ranking of online hot searches, and other data. What matters more is the audience's preference and interest points reflected by these massive data. In 2013, Netflix utilized big data technology to produce the series "House of Cards," which was a big hit. The high ratings and many good comments on "House of Cards" won Netflix a reputation and pushed Netflix to the position of the mainstream video network platform in the United States. Meanwhile, Netflix's self-produced works have become representatives of high-quality dramas. This way of creating film and television works based on big data can provide an innovative path for the development of movie scripts. Of course, the success of "House of Cards" is more about the precise audience positioning brought by the analysis of big data

After identifying the data source and collecting the basic data, the producer and the original team need to consider what data is usable. On the basis of the data source, through basic analysis methods such as funnel analysis (filtering useless information) and storage analysis (analyzing the user's behavior by storing it), and then analyzing the connection between the data, the data model can be used to analyze the subject matter of the screenplay, the structure of the story, the roles, and the plot, and so on. The mining of information on the selection of materials, structural settings, script characteristics, and photography styles of similar films and TV shows is conducive to exploring the creative connections between similar films and TV shows by understanding the commonalities and differences between them. Creators are able to understand the story mode and camera language that are popular with the audience so that they can target some popular story contents and plots and learn lessons from the relatively unsuccessful films and television works.

4.2. Artificial Intelligence in Movie Editing

In terms of editing applications, there have been some applications in 2016. 21st Century Fox Film Corporation used IBM's artificial intelligence system Watson to produce a trailer for the artificial intelligence thriller "Morgan" (Morgan). Similar to the process of AI scriptwriting, Watson first needs to "watch" thousands of thriller trailers for machine learning to analyze the shots, sounds, scenes, and other key factors of the thriller trailer to learn to understand the consistent style and rhythm of a successful thriller trailer. After learning the audiovisual techniques of these thriller trailers, Watson selected movie shots from the 90-minute Morgan film that fit the characteristics of a thriller trailer and created a 6-minute clip. Although the AI-edited trailer still had many flaws and could not be modified or supplemented by the editors, it managed to reduce the production cycle of the trailer from about one month to 24 hours, which was significant for the editing process.

4.3. Application of Artificial Intelligence to Image Processing in Film and Television

Artificial intelligence image processing involves pattern recognition, machine vision, multimedia technology, and other cross-cutting fields and plays an increasingly important role in face recognition, automatic driving, security monitoring, and other fields. In the creation process of film and television art, AI image processing can not only greatly improve the efficiency of post-production but also bring unexpected artistic effects!

The principle architecture of the "CIFF-Sense" system is given in Figure 11. In the post-production of the movie "Great, My Country," the image processing system of "CIFF-Sense" adopts the technologies of adversarial generative network GAN, Dense-Net, and CycleGAN network, and is composed of three modules, namely, resolution enhancement image quality enhancement processing unit, standard-definition image deblurring processing unit, and digital restoration processing unit for image processing. The development consists of three major modules: resolution enhancement, image quality enhancement processing unit, SD image de-field processing unit, and image digital restoration unit. It builds corresponding mathematical models by training tens of thousands of videos and millions of pictures for different problems in image processing, maximizes the pursuit of image quality by using neural networks, automatically processes large-volume picture materials, and improves the system's computational efficiency and stability by creating a LoopNet to successfully complete the post-production of the movie "Awesome, My Country." Post-production.

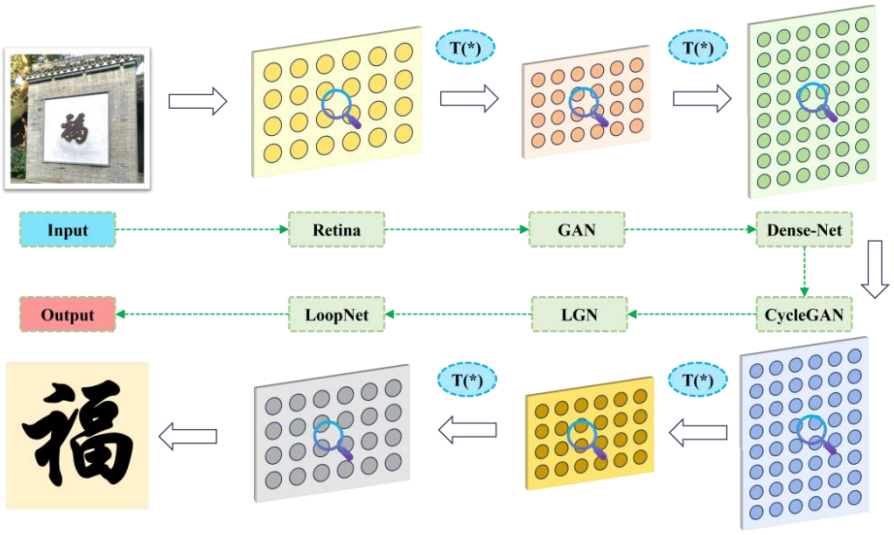

Fig 11. Image processing information architecture

Artificial intelligence for graphic image processing has been used in actual movie shooting, and the movie Fast and Furious 7 is a typical example. In the process of filming the movie, Paul Walker, who played the leading role, died in a car accident, and the movie shooting had to be interrupted. The producer Universal Pictures, in the case of the helpless, chose artificial intelligence, motion capture, and other digital technology so that Paul in the film is "reborn." Weta Workshop from the first six "Fast and Furious" movie materials to select unused footage selected to meet the "Fast and Furious 7" script of the character's expression and action. In addition, the crew also sought out Paul's two brothers and stuntmen, who were consistent with Paul, and Weta Workshop was responsible for completing the collection of physiological data from Paul's brothers as well as motion-capture data from professional actors. These materials and data are used through intelligent digital media technology to generate digital models, and then through the digital technology of the body double actor face replacement combined with shooting angles and lighting and other techniques, a realistic digital new "Paul Walker" was born.

4.4. Strengths and challenges

Although AI can analyze large amounts of data and provide creative suggestions, its creativity and imagination are still not comparable to that of humans. Therefore, when it comes to idea generation, AI often needs to collaborate with human creators to ensure the uniqueness and innovation of the work. AI technology still has limitations in certain aspects, such as its relatively weak ability to process emotions, intuition, and unstructured data, which may limit its application to character emotional expression, plot creation, and so on.

The artificial intelligence technology impact model is summarized in Figure 12. As can be seen from the figure, artificial intelligence in film and television art creation is mainly embodied in the whole process of film and television art creation, including pre-film and television creativity, film and television scriptwriting, medium-term film and television shooting, post-film and television editing and related packaging technology, and a large number of applications of artificial intelligence will greatly change the original eco-structure of the film and television industry, expand the industry's value chain, and improve the efficiency of work. The principle of its use is mainly through a large number of module learning, including film type analysis, keyword extraction, content logic construction to analyze the film conception, type development, and key elements of the law of generation so as to form a reference for other similar films, to reach a relatively unified standard of judgment, and then to the film and television development system assessment, content creation, media management, cinema scheduling, import and export marketing, etc., to form a sustainable development of the film and television ecosystem, to promote the development of the film and television industry level, to promote the development of the film and television industry. This will form a sustainable ecosystem for film and television development system evaluation, content creation, media management, theater scheduling, import and export marketing, etc., and promote the overall enhancement of the film and television industry.

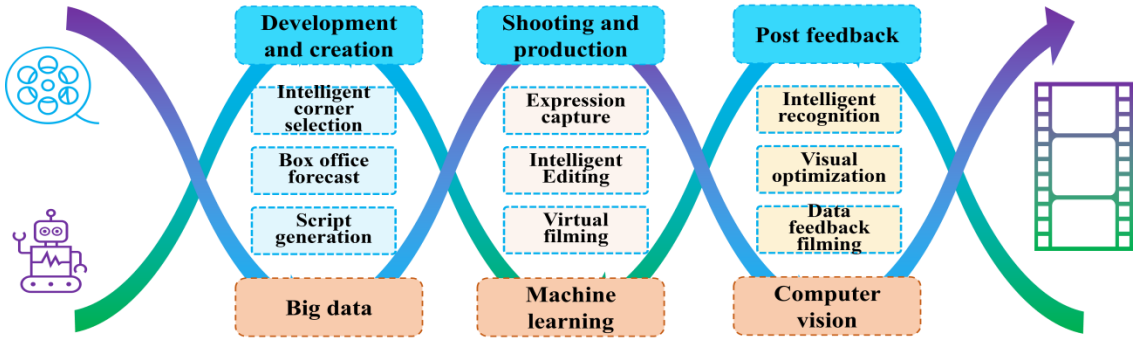

Fig 12. Technology Impact Model for Artificial Intelligence

Although artificial intelligence greatly promotes the continuous development of the film and television industry, its development still requires the control and constraints of relevant laws and regulations, especially in the film and television industry's practical application. While enjoying the dividends brought by the rapid development of modern science and technology, the security of personal information is also under unprecedented threat. As far as the current development is concerned, the public's awareness of the resulting ethical problems has gradually shifted from the initial weak consciousness to a high degree of attention. Real society not only has the problem of moral integrity between people but also between people and science and technology, between people and nature, and between people and society, which requires the whole society to pick up the burden of ethical self-consciousness.At the same time, the rapid development of AI may bring problems such as unemployment or job shifts for a large number of people. Too much AI intervention in the creation process may bring homogenized content. Worse still, AI may dominate human aesthetics. How to avoid these problems is the need for new arguments and methods.

5. Conclusion

This paper takes the influence of artificial intelligence on the creation of film and television art as the topic, respectively, from the creative elements of film and television production, post-production two aspects of the impact of artificial intelligence on its exploration and research, and combined with examples of research and analysis, the use of scientific and technological theoretical perspectives on the new era of film and television art creation art impact is elaborated.

Research has shown that by analyzing large amounts of audience data, AI can predict audience tastes and trends, thus helping film and TV production teams to better create works that meet market demand. In addition, AI can be used in scriptwriting, character design, and visual

effect generation, bringing more fresh ideas to film and television creation. Artificial intelligence technology can help with video editing, sound Processing, and special effects production in post-production, thus improving production efficiency and reducing labor and material costs.Yet the challenges that AI integration can bring, such as potential job displacement, creative homogenization, or ethical issues around data privacy and algorithms, require equally urgent attention and resolution.

References

[1] J. V. Pavlik, "Collaborating with ChatGPT: Considering the implications of generative artificial intelligence for journalism and media education," *Journal. Mass Commun. Educator*, vol. 78, no. 1, pp. 84–93, Mar. 2023, doi: 10.1177/10776958221149577.

[2] M. Hopkins, J. M. Logan, G. Kichenadasse, and M. J. Sorich, "Artificial intelligence chatbots will revolutionize how cancer patients access information: ChatGPT represents a paradigm shift," *JNCI Cancer Spectrum*, vol. 7, no. 2, Mar. 2023, doi: 10.1093/antics/pkad010.

[3] V. Pereira, E. Hadjielias, M. Christofi, and D. Vrontis, "A systematic literature review on the impact of artificial intelligence on workplace outcomes: a multi-process perspective," *Hum. Resour. Manag. Rev.*, vol. 33, no. 1, p. 100857, Mar. 2023, doi: 10.1016/j.hrmr.2021.100857.

[4] J. Muralidharan, "Advancements in 5G technology: Challenges and opportunities in communication networks," *Prog. Electron. Commun. Eng.*, vol. 1, no. 1, pp. 1–6, 2024, doi: 10.31838/PECE/01.01.01.

[5] M. Javaid, A. Haleem, I. H. Khan, and R. Suman, "Understanding the potential applications of artificial intelligence in agriculture sector," *Adv. Agrochem.*, vol. 2, no. 1, pp. 15–30, Mar. 2023, doi: 10.1016/j.aac.2022.10.001.

[6] S. Albahri et al., "A systematic review of trustworthy and explainable artificial intelligence in healthcare: assessment of quality, bias risk, and data fusion," *Inf. Fusion*, vol. 96, pp. 156–191, Aug. 2023, doi: 10.1016/j.inffus.2023.03.008.

[7] Z. Gao, "Application of 3D virtual reality technology in film and television production under internet mode," in *Cyber Security Intelligence and Analytics*, Lecture Notes on Data Engineering and Communications Technologies, 2023, pp. 341–349, doi: 10.1007/978-3-031-31775-0_35.

[8] J. Muralidharan, "Optimization techniques for energy-efficient RF power amplifiers in wireless communication systems," *SCCTS J. Embedded Syst. Des. Appl.*, vol. 1, no. 1, pp. 1–6, 2024, doi: 10.31838/ESA/01.01.01.

[9] C. Zhang and K. M. R, "Deep learning technology in film and television post-production," in *Proc. 2023 IEEE Int. Conf. Integrated Circuits and Communication Systems (ICICACS)*, Raichur, India, Feb. 2023, doi: 10.1109/icicacs57338.2023.10100148.

[10] Y. Wang, D. Wang, W. Pang, C. Miao, A.-H. Tan, and Y. Zhou, "A systematic density-based clustering method using anchor points," *Neurocomputing*, vol. 400, pp. 352–370, Aug. 2020, doi: 10.1016/j.neucom.2020.02.119.

[11] Curtis, M. Quinn, J. Obenauer, and B. M. Renk, "Supporting local health decision making with spatial video: dengue, chikungunya and zika risks in a data-poor, informal community in Nicaragua," *Appl. Geogr.*, vol. 87, pp. 197–206, Oct. 2017, doi: 10.1016/j.apgeog.2017.08.008.

[12] A. Prasath, "Energy-efficient routing protocols for IoT-enabled wireless sensor networks," *J. Wireless Sensor Netw. IoT*, vol. 1, no. 1, pp. 1–7, 2024, doi: 10.31838/WSNIOT/01.01.01.

[13] Z. Long and Z. Fan, "The application and dissemination path of intelligent algorithm big data analysis in film and television creation," *in Lecture Notes in Electrical Engineering, Frontier Computing*, 2023, pp. 724–731, doi: 10.1007/978-981-99-1428-9_89.

[14] C. Guo, "Analysis on the application method of new media technology in film and television media in the era of big data cloud," *Appl. Math. Nonlinear Sci.*, vol. 8, no. 2, pp. 1335–1368, Jul. 2023, doi: 10.2478/amns.2023.1.00040.

[15] Q. Chao, "Informatization of digital media film and television creative language under internet technology," *in Lecture Notes in Electrical Engineering, Frontier Computing*, 2023, pp. 856–863, doi: 10.1007/978-981-99-1428-9_107.

[16] L. Sulyukova, "Latest innovations in composite material technology," *Innov. Rev. Eng. Sci.*, vol. 2, no. 2, pp. 1–8, 2025, doi: 10.31838/INES/02.02.01.

[17] K. Dong, X. Peng, and Z. L. Wang, "Fiber/fabric-based piezoelectric and triboelectricnanogenerators for flexible/stretchable and wearable electronics and artificial intelligence," *Adv. Mater.*, p. 1902549, Feb. 2020, doi: 10.1002/adma.201902549.

[18] Adadi and M. Berrada, "Peeking inside the black-box: A survey on explainable artificial intelligence (XAI)," *IEEE Access*, vol. 6, pp. 52138–52160, Jan. 2018, doi: 10.1109/access.2018.2870052.

[19] V. Dunjko and H. J. Briegel, "Machine learning and artificial intelligence in the quantum domain: a review of recent progress," *Rep. Prog. Phys.*, Jun. 2018, doi: 10.1088/1361-6633/aab406.

[20] C. J. Kelly, A. Karthikesalingam, M. Suleyman, G. Corrado, and D. King, "Key challenges for delivering clinical impact with artificial intelligence," *BMC Med.*, Dec. 2019, doi: 10.1186/s12916-019-1426-2.

[21] T. M. Sathish Kumar, "Developing FPGA-based accelerators for deep learning in reconfigurable computing systems," *SCCTS Trans. Reconfigurable Comput.*, vol. 1, no. 1, pp. 1–5, 2024, doi: 10.31838/RCC/01.01.01.

[22] Di Vaio, R. Palladino, R. Hassan, and O. Escobar, "Artificial intelligence and business models in the sustainable development goals perspective: a systematic literature review," *J. Bus. Res.*, pp. 283–314, Dec. 2020, doi: 10.1016/j.jbusres.2020.08.019.

[23] F. Jiang et al., "Artificial intelligence in healthcare: past, present and future," *Stroke Vasc. Neurol.*, pp. 230–243, Dec. 2017, doi: 10.1136/svn-2017-000101.

[24] Y. Duan, J. S. Edwards, and Y. K. Dwivedi, "Artificial intelligence for decision making in the era of big data – evolution, challenges, and research agenda," *Int. J. Inf. Manage.*, pp. 63–71, Oct. 2019, doi: 10.1016/j.ijinfomgt.2019.01.021.

[25] R. Toorajipour, V. Sohrabpour, A. Nazarpour, P. Oghazi, and M. Fischl, "Artificial intelligence in supply chain management: a systematic literature review," *J. Bus. Res.*, pp. 502–517, Jan. 2021, doi: 10.1016/j.jbusres.2020.09.009.

[26] X. Lai and J. Chen, "Film and television art innovation in a network environment by using collaborative filtering recommendation algorithm," Feb. 2023, doi: 10.21203/rs.3.rs-2575617/v1.

[27] J. Wang, "Fast realistic 3D face modeling algorithm for film and television animation," in *Lecture Notes in Electrical Engineering, Frontier Computing*, 2023, pp. 1525–1530, doi: 10.1007/978-981-99-1428-9_201.
[28] B. O. L. Jagan, "Low-power design techniques for VLSI in IoT applications: Challenges and solutions," *J. Integr. VLSI Embedded Comput. Technol.*, vol. 1, no. 1, pp. 1–5, 2024, doi: 10.31838/JIVCT/01.01.01.
[29] E. P. Ijjina and K. M. C, "Classification of human actions using pose-based features and stacked autoencoder," *Pattern Recognit. Lett.*, vol. 83, pp. 268–277, Nov. 2016, doi: 10.1016/j.patrec.2016.03.021.
[30] Rajan, G. P. Ramesh, and J. Yuvaraj, "Glaucomatous image classification using wavelet transform," in *Proc. 2014 IEEE Int. Conf. Advanced Communications, Control and Computing Technologies (ICACCCT)*, Ramanathapuram, India, May 2014, doi: 10.1109/icaccct.2014.7019330.
[31] M. E. Lonescu and F. A. Stoica, "Verification and testing techniques for reliable system on chip solutions," *J. Integr. VLSI, Embedded Comput. Technol.*, vol. 2, no. 2, pp. 52–60, Mar. 2025.
[32] Y. Xu, M. Liu, and F. Wang, "A new type of video text automatic recognition method and its application in film and television works," in *Proc. 2023 6th Int. Symp. Autonomous Systems (ISAS)*, Nanjing, China, Jun. 2023, doi: 10.1109/isas59543.2023.10164415.
[33] N. Sharma, R. Sharma, and N. Jindal, "Machine learning and deep learning applications – A vision," *Global Transitions Proc*., pp. 24–28, Jun. 2021, doi: 10.1016/j.gltp.2021.01.004.
[34] P. Dhruv and S. Naskar, "Image classification using convolutional neural network (CNN) and recurrent neural network (RNN): A review," in *Machine Learning and Information Processing, Advances in Intelligent Systems and Computing*, 2020, pp. 367–381, doi: 10.1007/978-981-15-1884-3_34.
[35] S. Zhang, Y. Hu, and G. Bian, "Research on string similarity algorithm based on Levenshtein distance," in *Proc. 2017 IEEE 2nd Advanced Information Technology, Electronic and Automation Control Conf. (IAEAC)*, Chongqing, China, Mar. 2017, doi: 10.1109/iaeac.2017.8054419.
[36] C. Yao, X. Bai, B. Shi, and W. Liu, "Strokelets: A learned multi-scale representation for scene text recognition," in *Proc. 2014 IEEE Conf. Computer Vision and Pattern Recognition (CVPR)*, Columbus, OH, USA, Jun. 2014, doi: 10.1109/cvpr.2014.515.
[37] L. Yu, Y. Gao, Y. Yan, and W. Zeng, "Multi-view reconstruction of bullet time effect based on improved NSFF model," Apr. 2023. [Online]. Available: https://arxiv.org
[38] J. Tang, *Foreseeing the Future: Transforming Cinema in the Digital Age*. Beijing, China: Tsinghua Univ. Press, 2021.
[39] R. Rahim and S. Sindhu, "AI-driven multidisciplinary frameworks for solving complex societal challenges through the integration of science, technology, and humanities," Bridge: J. Multidiscip. Explor., vol. 1, no. 1, pp. 43–52, 2025.
[40] M. Kavitha, "A hybrid physics-informed neural network approach for real-time fatigue prediction in aerospace alloys," *Adv. Mech. Eng. Appl.*, pp. 50–58, 2025
[41] H. Caddwine and I. Leila, "Speech-based biometric authentication for secure smart home access," Natl. J. Speech Audio Process., pp. 62–70, May 2025, doi: 10.17051/NJSAP/01.03.08
[42] R. H. Patil and H. H. Hochmair, "Self-supervised audio representation learning for robust speaker verification," *Natl. J. Speech Audio Process.*, pp. 26–33, Jul. 2025, doi: 10.17051/NJSAP/01.04.04.
[43] L. Gelman and R. Alvarez, "Design and implementation of a CMOS-based high-speed data acquisition system for industrial sensors," *Natl. J. Electr. Electron. Autom. Technol. (NJEEAT)*, vol. 1, no. 3, pp. 35–43, Sep. 2025, doi: 10.17051/JEEAT/01.03.05.