

Analysis of Artificial Intelligence Design Incorporated into Design of Street Space in Small Cities

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Abstract

INTRODUCTION: At present, China's urbanization continues to develop, but the level of urban planning and design has not kept pace with the progress of development, especially the creation of street space in small cities, which is still not able to adapt to the current needs of people's cultural life. With the development of the economy and science and technology, artificial intelligence and other information technologies are constantly integrated into daily life. Therefore, utilizing artificial intelligence for street space design research is significant.

OBJECTIVES: To improve the development level of artificial intelligence, information technology, and the application level of artificial intelligence in China; to solve the problem of the relatively low level of street space design in the current city, especially in small towns, to meet the needs of people's cultural life; to promote the improvement of the level of artificial intelligence in China for the convenience of civil life, and to further improve the level of street space design in China.

METHODS: Firstly discusses the theories, such as the principles of street space design in small cities, to illustrate the necessity of integrating AI into street space design in small towns; secondly, the model established by AI is used to optimize the street space in small cities; finally, the feasibility of integrating AI design into street space design in small towns is illustrated through cases and examples.

RESULTS: Street space design in small cities in China needs more design aesthetics, and artificial intelligence needs to be integrated into street space design. Artificial intelligence has a noticeable optimization effect on street space design, and using artificial intelligence can improve the design level of limited space. Also illustrates that artificial intelligence can be better integrated into the street space design of small cities through cases.

CONCLUSION: In the context of the digital era, the street space design of small cities needs to apply artificial intelligence. In modernization-oriented urban construction, the street space design level of small towns should be further strengthened to improve the modernization level of cities.

Keywords: artificial intelligence, small cities, streets, spatial design

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1. Introduction

The geography and culture of a city is its soul. When one enters a town to learn more about it, the first impression one gets of life is its streets. It is where the people live and where cultural events are held. The road is connected

to the city center and the cultural context of the city. The healthy and sustainable development of the town depends on the sustainable development and dissemination of the regional culture(Cai et al., 2022). The Chinese people have 5,000 years of history and culture, which has always been the people's pride. However, with the rapid development of economic reforms and the openness of landscape designers, living elements have become the

dominant factor in planning. Some street landscape designers even use popular products without design concepts, which is why many similar streets have appeared worldwide in recent years, leading to more urban roads in the context of AI becoming business models. Street products are a place of leisure as they change with the internet(Sun, 2021). While traffic has increased, it has also depleted resources, and most of the road maps in many scenic areas have no cultural identity, only the current commercial advantage.

Many landscape designers no longer limit themselves to their home country when creating their work but pay more attention to foreign design concepts and look for minimalist styles. The starting point for learning and exchange is good. However, regardless of living conditions, cultural differences, and unthinkingly following trends at home and abroad, they often forget the beautiful cultural heritage of their ancestors and lack the most fundamental human significance(Mohamed & Van, 2022). The existing environment and climate of each city are specific, and when designing urban spaces in the context of AI, street environments must be designed specifically for urban design. Urban environments are fragmented due to plagiarism and the convergence and disappearance of the character of urban areas. Every corner of the city has abstract urban streets, such as street plazas, train stations, parks, and so on, which implies similarity. However, the formal pursuit of beauty and the neglect of local characteristics have also led to the loss of the status of public art. Paths connect movement and sound. One must see the surface, tap into the will, and deepen the spirit of place(Patricia, 2021).

Suppose the formal consciousness is higher than the cultural connotation of the substance itself, and the substance lacks creativity. In that case, the city must have regional characteristics and retain the most valuable cultural heritage. When urban space design in the context of artificial intelligence is combined with regional cultural features, streets, cities, and towns are no longer popular but personalized. People have shifted from subsistence needs to quality of life. Therefore, in recent years, in urban development and construction, many urban street design works in the context of artificial intelligence have been transferred to different parts of the city and people's lives. While making people's living environment more artistic, some people who know little about urban street art have pursued an artistic quality of life(Rodriguez-Valencia & Ortiz-Ramirez, 2021). This has led to many negative cultural connotations in the design of urban spaces in the context of peripheral AI and people's bad taste in creating urban areas in the context of AI. However, due to some factors, these urban road projects were dismantled soon after they were built, an obvious waste and landscape cultural resources of temporary road projects. The unsustainable use of large amounts of labor, physical resources, money, and valuable space only creates a disruption one must be aware of. If not effectively addressed, it will generate a time bomb for future environmental development and threaten the

environment. Every successful urban street design in the context of AI has a lasting artistic vitality and has long played a vital role in cities' cultural construction and branding influence (Valente et al., 2021). Therefore, the authors argue that the design of urban spaces in the context of AI should avoid crass, clumsy, and ad hoc planning of urban areas in AI and introduce a culture that supports the city's image.

The emergence of urban street design in the context of artificial intelligence is an artistic decoration of public space, which plays a vital role in presenting the personality and heritage of historical and cultural heritage. In terms of urban space in the context of AI, the task of urban space planning in the context of AI is to utilize and organize urban space in the context of AI, beautify the shape of urban streets in the context of AI, and popularize regional culture. Combining urban street design in the context of artificial intelligence and urban cultural space should increase the connotation of public art and urban space in creating urban streets in the context of artificial intelligence(Wu et al., 2021). For the city, this helps the development of regional culture and creates a win-win situation.

2. Background of the study

Creating urban landscape space is an essential part of creating an urban environment and is the primary carrier for reflecting the cultural characteristics of the city. Urban landscape design plays a vital role in the city's appearance, impression, and mechanism, reflecting the region's economic status and cultural needs. The road's original elements have disappeared with the city's development, mimicking the old patterns of unquestioningly dominated western landscapes(Caglar et al., 2023). The appearance of roads in different cities is becoming increasingly similar, with most cities having almost identical roadscapes. Modern transportation is growing at a rapid pace. However, greater regionalization has disorganized urban structures and landscapes, resulting in a lack of basic communication and exchange between communities and essential ecological relationships between life, roads, and cities. The short-term development of "visual design" has been primarily driven by the advantages of landscaped streets and urban space in the context of artificial intelligence, which has taken it from the path of scientific and ecological development. Metropolitan area in the context of AI has become a tool for blocking communication between people and separating urban area in the context of AI(Song et al., 2022). Currently, China's cities are developing remarkably rapidly. It is essential to understand the historical background of urban space in the context of artificial intelligence and guide its development. Therefore, based on researching and systematically analyzing the current situation of China's urban landscape space, starting from the city's cultural roots, transforming the urban landscape and restoring the

humanistic vitality of the metropolitan area in the context of AI is the only way to find out the reasons for its backwardness and make the urban landscape space more humane.

Chinese cities' urban landscape has its characteristics and is a typical modern urban style. Streetscape design is a combination of architecture, design, and environmental design. If the city is considered a precise machine, the streetscape is like a gear and a city tool. This paper aims to deeply study the history and current situation of China's urban road landscape and analyze and summarize the problems and guiding ideology in the development of the urban road landscape (Harirchian et al., 2021). Combining the theory and practice of excellent road landscape design at home and abroad, this paper discusses the urban landscape protection and planning strategies that have given new meaning to road landscape design in the recent period. In the context of rapid urban development, products of the times, such as the sharing economy, slow-growth cities, and green cities, can be combined to truly protect the interests of citizens in the center of the town. The development of urban automotive landscapes should focus on harmonious road traffic, distributing as much as possible between people and cars, reducing conflicts and clashes between people and vehicles, and maximizing the two-way requirement of harmonious coexistence between modern traffic and pedestrians (Vincent et al., 2021). It also creates harmonious coexistence and interaction between people in urban public space—curved streetscape design, as shown in Figure 1.

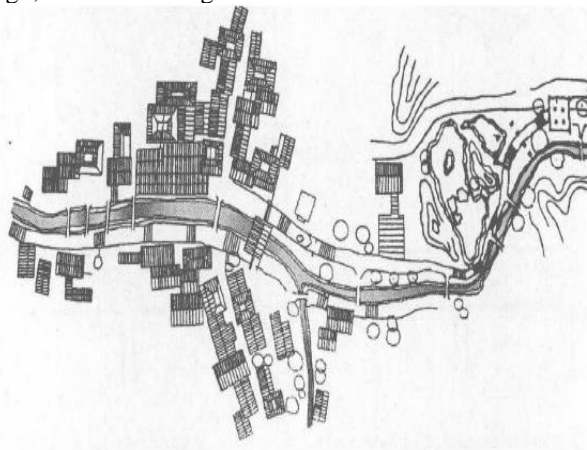


Figure 1 Curved streetscape design

This paper takes the urban space in the context of AI of Chinese urban landscape as the research object, analyzes the general characteristics of urban landscape space, studies and analyzes the historical development, essential elements, and natural conditions of the city, and researches the related design theory and practice. In the historical context of Chinese cities, contextual continuity and ecological interactivity play an integrated role in urban development, providing an essential theoretical and scientific basis for analyzing the geographic expansion of Chinese urban landscapes (Ahmad et al., 2021). This study is based on the vital characteristics of urban space in the context of urban landscapes and AI. It gradually extends

to urban architecture, life, culture, and landscape systems. This study supplements the theoretical knowledge of China's road landscape. The theory provides academic support for solving traffic problems, neighborhood communication problems, and the future expansion of urban roadscape, as well as giving relevant references and suggestions for the development of road scape in China. From the perspective of urban space and urban landscape in the context of AI, this paper proposes new perspectives on the transformation of old city streets and the expansion of urban living landscapes, reflecting the importance of improving the current environmental conditions of roads.

3. Research methodology

3.1 Study design

Urban planning must be based on managing and administrating urban spaces and building volumes in the context of AI to meet the requirements of optimal planning. In urban planning, the shape of the metropolitan area in the context of AI depends on different urban factors (Jaljolie et al., 2021). In practice, display management should be based on the degree of road utilization, road characteristics, and the impact of urban road interfaces to determine the range of values of various road interface management indicators to meet the requirements of different road patterns. People have studied the hands of urban spatial shape management in the context of artificial intelligence, and without deviating from the needs of the actual planning environment, they have learned the spatial method based on spatial information experience and subject observation and transformed it into the study of urban spatial shape control in the context of artificial intelligence. In the examples of urban planning developed and implemented in China's current urban planning program, an important part of the quantitative urban structure monitoring methodology is essential to improve the feasibility and viability of urban planning—establishing an adequate road management system.

Research topics, directions, and relevant literature sources, such as observational experience, outdoor space, urban planning, and urban space in the context of artificial intelligence. Relevant theoretical works, existing domestic and international journals, and excellent dissertations were read, refined, analyzed, and compared (Barzegar et al., 2021). People collected development guidelines from existing urban planning and road interface management standards, collected typical urban planning cases at home and abroad, and reviewed the usual urban planning guidelines review methods. Practical problems and methods of urban spatial modeling in AI have been identified, providing a technical basis for people's research and a basis for analyzing existing experiments and comparative objects. This paper examines the relevant definitions of surface in compiling urban planning manuals in different regions of China. It compares the structure, management methods,

management approaches, and management effects of existing manuals. It also compares the indicators of existing urban guides. The analysis of the data indicators illustrates the current status of the reference framework and points out the shortcomings of the current indicator framework (Aydoghmish & Rafieian, 2022). The paper analyzes and evaluates the condition of significant streets in Chinese urban planning from the perspectives of cognitive and indicator systems. One finds out whether human observation is consistent with the analysis of real-world indicators, describes the current status of road traffic patterns in China, and attempts to transform existing roads into comfortable and pleasant street shapes based on the indicators proposed in this paper. The design of street space in different functional zones in China is shown in Figure 2.

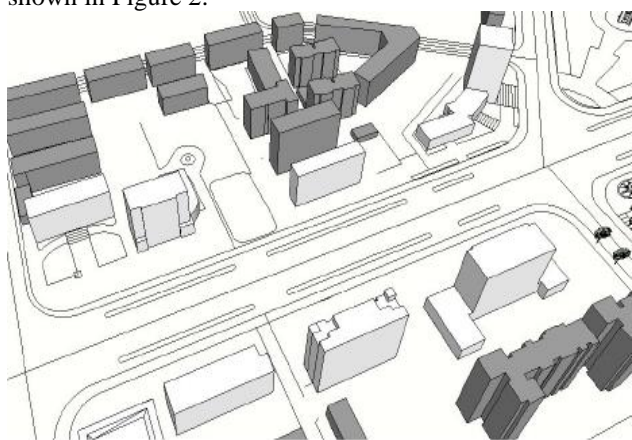


Figure 2 Design of street space in different functional zones in China

3.2 Principles of Urban Street Space Design in the Context of Small Artificial Intelligence

When designing streetscapes, planning from the road user's perspective is necessary. Everyone has a different concept of beauty. Therefore, urban road landscape design must take into account the different expectations of other people for the landscape, respond to the needs of the majority of people, and design a road landscape that meets the needs of the majority of people and respects the principle of human nature (Adjetej et al., 2023). The focus of safety and order is to ensure that pedestrians and vehicles do not interfere with each other, to ensure the safety of different road users, and to ensure regular traffic. Coordinate the time between people, cars, and roadways, adequately control vehicle speeds, provide spacious, undisturbed pedestrian spaces, ensure the immediate comfort of crossing pedestrians, ensure the safety and comfort of crossing pedestrians, and provide motor-free travel.

There are many elements of street space, and when designing streetscape spaces, attention should be paid to harmonizing the different aspects of the landscape with the overall environment, which requires people's

designers to adopt a holistic approach when designing to organize the street environment as a whole strictly and to coordinate the relationship between different elements (Qiu et al., 2023). When presenting regional landscapes, people should not only understand the functional characteristics of each area but also reasonably look for projects that utilize the cultural elements of the region, demonstrate the uniqueness of each functional area, ensure the overall cohesion of the region, and determine the main direction of development for each active site. Make sure to have perfection in general design principles. The first principle of respect for nature requires designers to protect wildlife while respecting its independent choices, fully respecting the natural characteristics of the design area, such as climatic conditions, topography, and environment. Secondly, the focus is on the design of local materials. One must try to develop locally adapted plant materials, such as native plantings.

Sustainable development is the most crucial concept when designing a road landscape. Sustainable development implies that special attention is paid to environmental protection in the context of economic development. This forces one to respond to the needs of today's people rather than jeopardize future generations' survival (Rana et al., 2021). In the current economic conditions, people must use and protect people's resources wisely. The principle of sustainable development is embodied in urban landscape planning in two ways: regional urban culture, which gradually emerges in historical changes, symbolizes the city, and is presented to people in different ways in the migration process. Therefore, in road landscaping, attention should be paid to adopting and preserving regional urban culture and applying it to modern road landscaping by incorporating modern elements to ensure its continuous dissemination and long-term sustainable development. Compared with traditional materials, these modern materials have the advantages of high performance, energy saving, and low emissions. Therefore, attention should be paid to using new materials when designing road landscapes, which ensures sustainable material development.

3.3 Expressions of regional culture

Geoculture abstractly reflects the culture unique to a particular area. Many elements of the urban landscape can serve as carriers of urban culture. Each city has individual parts, and each has its cultural expression. Local materials best reflect the city's geography, are cost-effective, create an emotional connection with residents, and provide a keen sense of geography (Park et al., 2022). Therefore, using vernacular materials in urban landscapes can better represent a city's geographic identity. Architectural representations of urban culture vary from region to region. Combining geo-cultural features with architectural design, urban buildings, and other common forms can create a unique geo-cultural identity. Therefore, modern

architectural design must respond to the basic needs of people's lives, complement the geographic landscape, and increase the expression of regional culture, which enables designers to use local cultural elements in architectural design appropriately, express abstract applications of architectural design, combine history with modernity, and reflect the changing geo-cultural characteristics of the times. The moderate use of street furniture can also effectively reflect regional culture. For example, some sculptures can creatively present and bring people the sensory experience of regional cultural elements through rational use and play a role in landscape expression (Um et al., 2021)—for example, some spaces with service functions, such as seats, signs, etc. Combined with certain geographical elements, they become one element that expresses regional culture in the urban landscape. It awakens people's understanding and recognition of geographic culture and makes the traditional street furniture in the city a rich regional culture. Plants play an important role in road landscape planning; they improve the road landscape environment by adding green roads and are carriers of regional culture. Native plants can adapt to local environmental conditions and have economic and lasting advantages.

Furthermore, due to different geological and climatic conditions, native plants have cultural attributes in urban development. Therefore, the care of native plants better reflects the cultural characteristics of urban areas (Baelos et al., 2021). The colors and patterns of street surfaces reflect the city's regional cultural aspects and enhance the street's overall atmosphere. Differences in street colors and decorative patterns can bring people different sensory experiences. In different functional zones, street design should adopt appropriate expressions, colors, and ways to reflect the uniqueness of regional culture. The difference in street design in different available zones is shown in Figure 3.

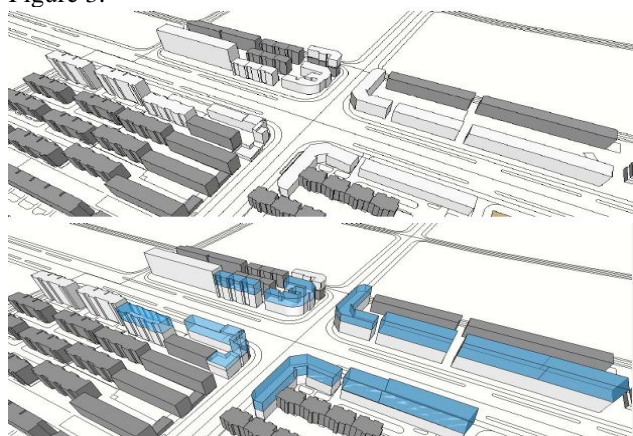


Figure 3 Differences in street design for different functional zoning districts

3.4 Artificial Intelligence

Artificial Intelligence is considered the engine of the information revolution with far-reaching implications

such as the steam engine, electricity, and information technology. Algorithms are ancient mathematical procedures that are categorized into general and narrow algorithms. There is a difference between public and biased algorithms. In a broader sense, an algorithm is a set of rules used to solve a problem, consisting primarily of logical, structural, or strategic mechanisms; in a limited sense, an algorithm is a set of coded instructions executed by a computer program that makes decisions through coded parameters, data manipulation and manipulation, and automatic machine evaluation (Stokel-Walker, 2023). Algorithms are at the heart of artificial intelligence technology. What are algorithms? Algorithms have different definitions, and their etymology is quite complex. The word "algorithm" comes from 9th-century Persian mathematics. However, the history of algorithms is much longer than the mathematicians who have been able to use them in math and computer science. Algorithms have been an integral part of humanity since the Stone Age. In short, an algorithm is a way of solving a problem, a form of solving a problem in a batch. For example, a recipe is an "algorithm" that allows the preparation of appropriate dishes using a recipe method. The design of the street space with increased functional zoning of the street is shown in Figure 4.

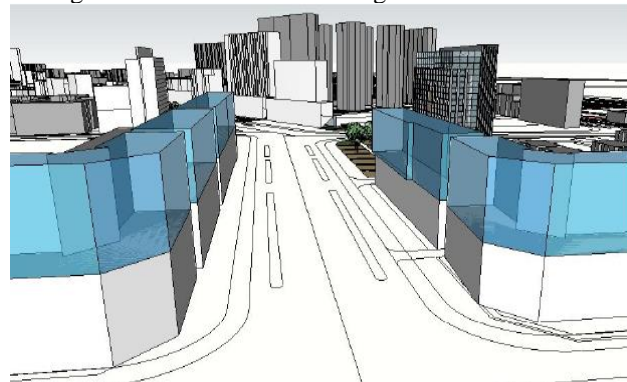


Figure 4 Street space design with increased functional street zoning

Compared with virtual properties or other abstract intelligence works, AI algorithms have distinct technical characteristics in four main areas: low generalizability, dependence on external data, uncertainty of results, and opacity. First, unlike the cascade of commercial AI, accurate AI systems can function in different application scenarios and thus produce different results. At the same time, this core community poses potential market risks and even moral and ethical risks. Second, the use of external data. The development and further development of AI algorithms depend to a large extent on the input of external data. The technical nature of this situation means that AI's analytical and decision-making capabilities are based on big data technologies, a dynamic process based on constantly updated data with no independent or stand-alone technological basis. At the same time, this phenomenon significantly raises the bar for market participants and poses severe challenges in terms of competitive analysis, regulation of market behavior, and

securities valuation. Third, production uncertainty. AI algorithms work in the same way as biological evolution, with many objects supporting both the original version of the algorithm and versions learned from large amounts of data. They may have different basic functionality skills, key features, and potential applications. Thus, identifying versions of AI algorithms is a severe problem—fourth, opacity.

The opacity of AI algorithms is multilayered, Especially if the user does not understand the AI algorithm and the data, purpose, and meaning of the use. The first stage of obscurity is due to needing more knowledge. If the information and information related to the algorithm is a state or trade secret, it leads to traditional secrecy. Due to the complexity and specificity of AI algorithms, few social elites can understand them, leading to a new era where few dominate the majority of society and contribute to social injustice. The essential functions, key features, and potential applications of AI algorithms in machine learning make it challenging to explain the inherent opacity of AI algorithms to designers.

The model of AI integration into urban street space design in the context of small AI studied in this paper is as follows:

$$p \in \sigma_j P_{rand(x)} = p_j x \in (0, iter1) \quad (1)$$

Equation (1) is how the AI algorithm finds the optimal path, where $p_j x$ is the specific weighting calculation of the model p .

$$q \in \sigma_j Q_{rand(x)} = q, x \in (0, iter2) \quad (2)$$

Equation (2) incorporates street space design into the optimization algorithm of artificial intelligence with specific substitutions. $Q_{rand(x)}$ is a rearrangement of the order of model summation, and the scope of the algorithms of Equation (1) and Equation (2) is defined as follows:

$$\sigma \subseteq T_1 \cup T_2, P_{rand} \subseteq T_1, Q_{rand} \subseteq T_2 \quad (3)$$

σ describes the error synthesis to consider two variables, P and Q, in the model and, therefore, a concatenation. After iteration of the optimization algorithm incorporating street space design into artificial intelligence:

$$p \in \sigma, P_{rand}(x) = p, x \in (0, iter) \quad (4)$$

Equation (4) $(0, iter)$ is taken as the intersection of Equation (1) and Equation (2). The single node is optimized, and after it becomes multi-node, it is as follows:

$$\begin{cases} L\{p_1, p_2 \dots p_n\} = \sigma^* \\ p \in \sigma^*, P_{rand}(x) = p, x \in (0, iter) \end{cases} \quad (5)$$

σ^* is the sum of the random error terms for which only the L-set is considered.

4. Results and discussion

4.1 Urban Street Space Design Methods in the Context of Small Artificial Intelligence

4.1.1 Design of Transportation

Short-distance transportation is one of the characteristics of pedestrians and has become the primary basic mode of transportation. For example, walking can be handled immediately regarding shopping, leisure, community, and other people's activities. Creating a safe and reliable pedestrian system in urban spaces in the context of AI can promote harmonious and good neighborly relations among citizens. Combining slow mobility networks and open spaces can create a friendly and relaxed environment for community spaces. This slow and extensive network consists primarily of non-motorized and pedestrian networks that effectively connect transit stops and parking areas. Create a mobile, slow, dense social unit network that provides adequate space and activity. Creating a complete chronic network unlocks the internal state of blocks and connects multiple blocks into a group. Depending on the function of the walkways, they can be categorized into pedestrian, thematic, and readymade zones. Spatial zones are where additional building features are concentrated, such as green, municipal, and recreational facilities. In contrast, front areas bordering a building can serve as landscape buffers or pedestrian zones, providing citizens with a safe and secure walking area. The impact of sculpture and fountain locations on street space design is shown in Figure 5.

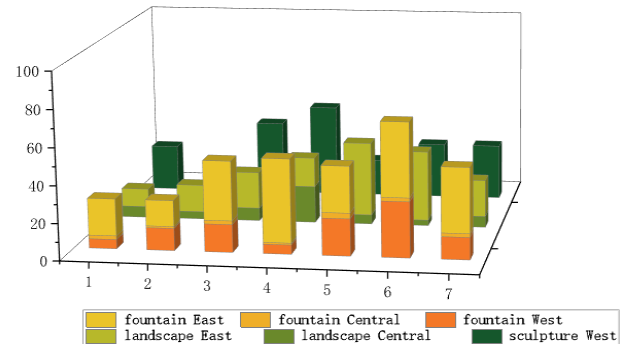


Figure 5 Influence of sculpture and fountain location on the design of street space

Characteristics and practices of transport efficiency contribute to the daily life of the transporter and the development of friendly relations. On the road of the university develops the mode of transportation on public transport. Transportation is a pioneer that is closely related to the traffic router on the small tail. The freedom and flexibility of cycling is a matter of traffic management. In modern city life, occasionally, people stand around the world and facilitate the image of the city. Transportation is limited by terrain and climatic conditions. For example, many people find their way around the routes on certain days. Indeed, global pioneers are innovating at a time when the transportation industry is challenged to be pioneering and innovative. The manufacturers of non-motorized transport pay for the

management of routes. Demand for long-term goals has increased, as have the costs of transportation and household use. Indeed, with the constant influx, this has an impact on urban transportation and the environment. Parks are a rarity among urban spaces in the context of AI, and like spaces on city streets in the context of AI, there are significant problems with the concept of roads where individuals live.

4.1.2 design of neighborhood buildings

To accommodate the management of multiple scale levels, the population area's size has been carefully designed to create an open mental space. Interfaces between pedestrian spaces and active neighborhoods (e.g., street-facing walls, basement buildings, etc.) should maintain human heights and appropriate aspect ratios at the interface and use humane ladders to create a friendly and comfortable spatial experience. Human-centered detailing and zone control can quickly create an excellent sense of openness. Rhythmic block interfaces can build an active block environment. The architectural interface of the area is colorful and harmonious. The layout, gradual removal, and detailing of elevations are coordinated across the interface's height, orientation, and width, eliminating volumetric differences between neighboring buildings. The interface design of roadside buildings should be divided into vertical and horizontal components to meet the visual requirements of pedestrian and vehicular speeds. Coordinate walking speeds and movement between the vertical and horizontal portions of the façade. Vertical separation can be achieved through color, partitions, window opening styles, window frame trim, molding, display cases, posters, etc. Neighborhood building facades must also conform to the general style and character of the city and must be customized according to neighborhood classification and building function. Color extraction should be combined with local historical and cultural characteristics, especially color extraction and auxiliary color extraction, as well as connecting and adjusting color blocks from an aesthetic point of view. Environmental design of urban spaces in the context of artificial intelligence should focus on the formation of characteristics, and the creation of local features should harmonize and reflect the fashion competition of the times. Stylistic coordination is encouraged between identical components, user interfaces, and components that share the same proportions, colors, layout styles, and external combinations. At the same time, core groups should focus on building quarterly attributes and reinforcing self-identity. It is recommended that adjacent buildings have similar heights and boundaries, spatial and façade structures, colors, and shapes. Focus on creating key AI context urban street features such as arterials, primary entrance interfaces, and landscaped entrance nodes. Architectural styles, colors, proportions, stacked materials, and shapes should be thoroughly examined to

reflect the city's image and reinforce self-identity. Signs, awnings, and billboards should be investigated for storefront appearance, and the overall design should be consistent with the urban style of the neighborhood. Elements on store facades (e.g., signs, awnings, etc.) and poster walls on facades add variety and interest to the urban street interface in the context of AI and humanize large buildings. When creating custom store and display panels, it is necessary to harmonize the interface and the format of the blocks. Generally, store signs, awnings, and billboards should be neatly arranged and not too large, oversized, or large enough to cover a building's façade. The impact of murals and streetscape vignettes on the design of street space is shown in Figure 6.

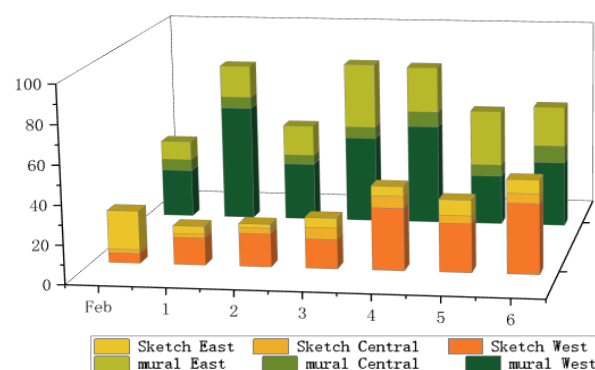


Figure 6 Impact of murals and streetscape vignettes on the design of street space

4.1.3 design of landscaping and vignettes

Green landscape design in urban spaces in the context of AI is essential for creating overall ecological impact in urban areas in the context of AI. Road landscape design that meets environmental and social needs requires a high level of greening and improves the quality of the community environment through quarterly planning. Wood ponds are planted artificially and are the main areas where trees grow on urban roads. Wood ponds are the basis for plant root protection and are essential to the urban landscape. In urban area planning, two rows of street trees can be used as alternating deciduous and evergreen trees in spacious areas. The continuous arrangement of tall trees on spatially appropriate roads creates excellent AI-background urban streets in AI-background urban spaces, thus improving the ecological quality of recreational facilities. The shape and material of the grill should correspond to the mortar. Encourage using wooden swimming pools and recreational facilities along the pathway to create more vibrant AI context urban street spaces. A green pedestrian zone is a continuous strip of roadside greenery that separates people from cars and makes walking safer. Pedestrian green spaces are essential for improving the road transportation system, the environment, the quality of life, and the city's image. Pedestrian zones should be designed with pedestrians in mind, planted with native species, and integrated with trees, shrubs, and greenery to enhance the landscape level

of vertical spaces, create continuous green sidewalks, isolate dust and urban street noise in the context of AI, and improve the appearance of urban streets in the context of AI. When constructing green sidewalks, attention should be paid to rational layout to create the necessary horizontal space to meet people's needs.

The creation and design of sculpture must respect the basic principles of landscape design, explore local culture, connect public spaces around urban streets in the context of AI, optimize the spatial environment, and improve the interactive experience with the public. Public places are essential to open public space, and China's design in this area still needs to be fixed. In some cities, people's attitudes towards public spaces are limited to individuals, without considering the integration with the environment. However, the style and layout of public spaces are also detached from reality. When designing public spaces, they should be integrated with the surrounding landscape or attractive public spaces and placed in sunny areas to increase the efficiency of use. Also, avoid compromising comfort and building entrances away from ventilation corridors, such as high-rise buildings. Continuous seating is provided to increase the use of public spaces, but they only connect directly to the curb, interfering with access. When designing newspaper tables as urban furniture, consideration should be given to the functional layout, demographic composition, population consumption level, service area, traffic organization, and rational network layout.

Installation of leaf ropes on sidewalks must comply with national laws and regulations and urban planning requirements to avoid impacting traffic and the environment. Newsstand is a public property of the city and an irreplaceable cultural landscape. Planning requirements: The area of newspaper development shall be at most, the approved site area, and the business scope must be expanded. In terms of appearance, size, material, and color, they should be integrated with the regional culture of the city, harmonized with the city's style, and use similar AI context urban street space, material, and color in the same area. The impact of greening variables on the streetscape is shown in Figure 7.

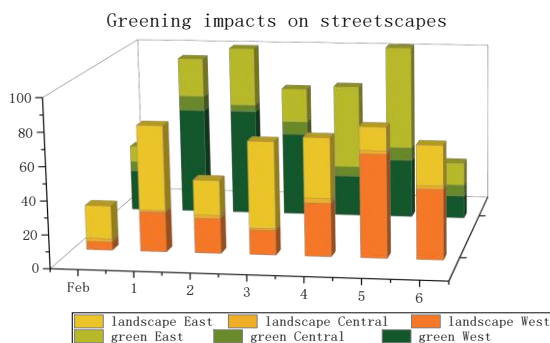


Figure 7 Impact of greening variables on streetscape

4.2 Design of internal space expansion of urban streets in the context of artificial intelligence

From the point of view of the public artificial intelligence background city street, the internal space of the city is the muscle organization of the city street in the context of artificial intelligence, and it is also an essential part of the space. The design of the physical space of the city street in the context of artificial intelligence not only considers the external physical interface of the city street in the context of artificial intelligence but also considers the internal space of the city street in the context of artificial intelligence, paying particular attention to the behavioral and psychological needs of modern people. According to the composition of the physical space of the road, it is divided into the surface part and the underground part. Therefore, this design focuses on the intensive structure of commercial function forms and creates a consumption environment. The underground part has various functions such as transportation, municipal and retail. Due to the unique nature of underground space, safe and efficient utilization of space resources and improvement of its operations are vital issues to be addressed in the planning. The interior of the road realizes the most important functions of the road. Through a systematic study of current successful and proven cases, as well as the analysis of components that improve the quality of rooms, it can be concluded that the most significant difference between intelligent design and traditional interior design is quantitative control and wise decision-making to balance supply and demand—creating consumer environments in the city through innovative technologies. In the context of urban business systems, spatial structure is a dynamic balance between the spatial manifestations of urban business activities in terms of form, level, scale, and organization of circulation and consumption factors. With the rise of the internet and big data, the structural design of urban commercial places must consider the network connections between different functions and the dynamic balance between functional spaces and customer needs (e.g., types, sizes, shapes, and volumes). It quantifies and analyzes the markets of physical and behavioral areas and uses this dynamic balance mechanism to determine the organization and structure of spaces. For example, suppose one takes the functional spatial design and design of retail in the third ring of Fuzhou as an example and uses the Baidu map data platform to collect data on the type and density of distribution for each company. In that case, one obtains the layout of the commercial network characterized by central and auxiliary distribution, forming a multi-level development plan that reasonably adapts to the needs and location of each company. The pedestrian space system is mainly composed of different forms of commerce, which can be regarded as a microsystem of urban business. Complex factors, such as different spatial and temporal dimensions, subtly influence household commercial forms

and operations reorganization. Therefore, the optimization of commercial space land use can be inspired by the concept of commercial space organization at the city level.

In a data-flow-oriented big data environment, quantitative analysis of internal system uncertainties and individual behaviors is conducted to summarize the quantitative relationship between "suppliers" and "consumers" in commercial ground space and to evaluate the "user concentration" perspective. Evaluate supply and demand from the standpoint of "concentration" and modify or reconfigure the configuration plan to the optimal business interface. The physical realm of the urban street in the context of experimental artificial intelligence has become one of the most critical channels for consumption, experience, functionality, quality, and offline services and is becoming increasingly popular. By creating an experiential consumer atmosphere, connecting traffic, energizing energy, and creating "emotional resonance," the focus is on creating an integrated commercial function with leisure and shopping as a side effect, combining regionality, culture, interactivity, context, fun, and openness. Accessibility is the foundation of the experiential atmosphere. Within the organization, it is necessary to ensure consistency and integration between different business areas. When designing curved corridors or circular moving lines, the natural connections of the store should be organized through improvements, easy maintenance of equipment, reduction of dead ends, and creation of simplified internal walking systems. At the same time, a separate spatial-cultural concept is created that incorporates the store's local character or individual needs and adds inland landscaping to enhance the possibilities and quality of the visitor's interactive activity with the space. The impact of the sculptural variables on the streetscape is shown in Figure 8.

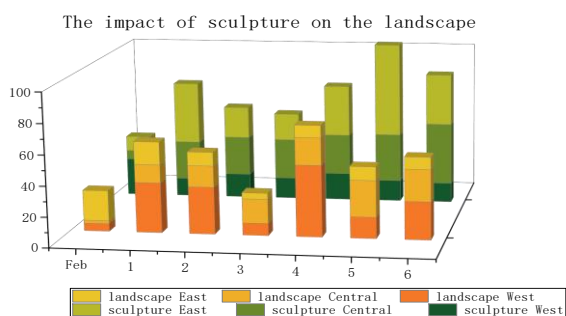


Figure 8 Impact of sculptural variables on the streetscape Urban space is not a unique spatial structure but is closely related to the general spatial and temporal dimensions of urban streets in the context of AI. This is an opportunity to overcome the homogenization of urban roads in modern AI and the intensive development of urban spaces in contemporary AI. Currently, the development of many urban spaces in AI usually extends to underground spaces with three main tasks: development of office, trade and leisure, vehicular (railroad, parking, etc.), and energy

corridors. Underground spaces are characterized by solid confinement and negative external influences, which puts higher demands on developing safe and bright underground spaces. The first step in leading to an innovative city model is to follow the development of intelligent spatial patterns to diversify the network and design urban spaces in the context of underground artificial intelligence. Innovative visualization application realizes underground space's safe and efficient expansion and function optimization from the perspective of intelligent design. It improves the value and reliability of underground space development. The development of underground roads must first take the form of roads. Underground space should be expanded as a function of underground space, coordinating the tasks of underground space and subterranean space and developing a three-dimensional vertical symbiosis mechanism. Secondly, in the underground transportation network, the underground road nodes are organically connected, and the corresponding site functions are organized and combined to produce a functional coupling effect on the underground site nodes to avoid the erosion of "homogenization." From the visual point of view, the visualization of underground road space can be divided into three main types according to time, space, and logic.

5. Conclusion

As the most crucial element of the city in the context of artificial intelligence, the city street not only reflects the style of the town but also concentrates on the unique charm of the city, indicating that the attraction of the town to people lies in presenting its unique regional cultural charm, rather than the quantitative structure. With the support of regional culture, the city gains its splendor and uniqueness and eventually becomes a great lost place. An essential theory on urban landscape elements and culture has been put forward in response to the "thousand kilometers" phenomenon in cities. In the field of city streets in the context of representative geographic and cultural AI in some regions of China, the state of city streets, buildings, landscapes, sidewalks, and services in the context of AI, as well as the application of regional cultures in the urban landscape, are analyzed in depth. The laws and methods of road landscape construction are studied to provide a reference for road landscape construction. Therefore, it is necessary to emphasize the concept of humans in the process of urban street design in the context of AI to improve and serve the geographic culture of the city. The creation of regional culture has a positive impact on road landscape planning. Therefore, people must respect, inherit, and develop regional culture. At the same time, people hope to combine excellent foreign cultures and add new vitality to urban streetscapes in the context of AI by strengthening local cultures.

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