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Kinesthetic Approach in Architectural Space

Ajay Yadav[1], Ritu Gulati[2]
[1]*M. Arch. Student, Faculty of Architecture, Dr APJ Abdul Kalam Technical University, Lucknow,*
[2]*Associate Professor, Faculty of Architecture, Dr APJ Abdul Kalam Technical University, Lucknow*

Abstract: ***Constructed spaces have the ability to influence the lives of people living in those spaces for good or bad. They have the potential to influence the user's experience. This can be done by choreographing each area in a building in order to give a person different perceptions when going through those areas.***
We experience any visual frame as we pass through a built space and view it in relation to the neighboring frame. At the same time, we do not simply see them when moving via a space, but even our senses are also engaged in the space perception process. They are driving our front ward motion unintentionally and our unintentional pauses. As we pass through a construction, we see the various components of the building unfold. One needs to decipher the various layers that articulate these spaces in order to address the kinesthetic factor.
The order of spaces not only controls the direction of motion and the pattern of motion, but also indicates that an individual pauses or continues. Many experiences are felt because of the sequential emergence of various spaces when going through Indian traditional architecture. These observations are not accidental but are the result of conscious design decisions.
But the concept of kinesthetics is ignored as an incidental phenomenon if we focus at contemporary architecture. Architects have some goals that they tackle any project with. Among them, the user experience is typically given the least importance, even though it is the most vital issue. The opportunity for buildings built with sound kinesthetics is to construct a human environment that is conducive to its inhabitants. This research is an attempt to find out the variables by paying close attention to the kinesthetics of a space from which the experience of the users can be improved.
Keywords: Choreographing spaces, kinaesthetic, conductive space, unintentional pauses, visual frames.

I. INTRODUCTION

Kinesthetics is essentially a collaborative gesture of vision and movement through space in architecture. We need to understand how a human moves through a space to comprehend it. Constructed environments have the power to shape the lives of people living in spaces for better or worse. They have the potential to influence the user's experience. This can be done by choreographing each space in a building in order to give a person different experiences when going through those spaces. Kinesthetics can form the expectations, moods and thus the behaviors of the user. With regard to particular activities, the activity of the human body may be regulated within the built environment. The changes, pauses and focus in the pathway need to be held in mind when analyzing the kinesthetic characteristics of a place. This research is an attempt to explain its potential and illustrate how it can be addressed and when.

A. Phenomenon of Transparency

The spaces in which motion is promoted by incorporating different spatial elements and educating people about next frame such as openness at a time. These spaces are multi-layered. In such a case, this phenomenon is not clearly visible but unconsciously felt hot. Villa Savoy is a relevant example of the multi-layering of frames of the Sky, the landscape and the continuing planes that portray remarkable transparency that promotes movement and guides the Seeing Eye.

Fig. 1 Villa Savoy Spatial Frame

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B. Afterimage

An afterimage is an image that appears even after the original image has been left behind. Let's look at it from an architectural perspective. An afterimage can be defined as nothing but a recurrence into the succeeding spaces of a few elements of previous spaces. It becomes a spatial motif in the next space due to the repetition of that element. For example, the recurrence of arches in Humayun Tomb, Delhi makes it present in all spaces and after picture, but its articulation is different, so one does not feel monotonous when moving through the different spaces.

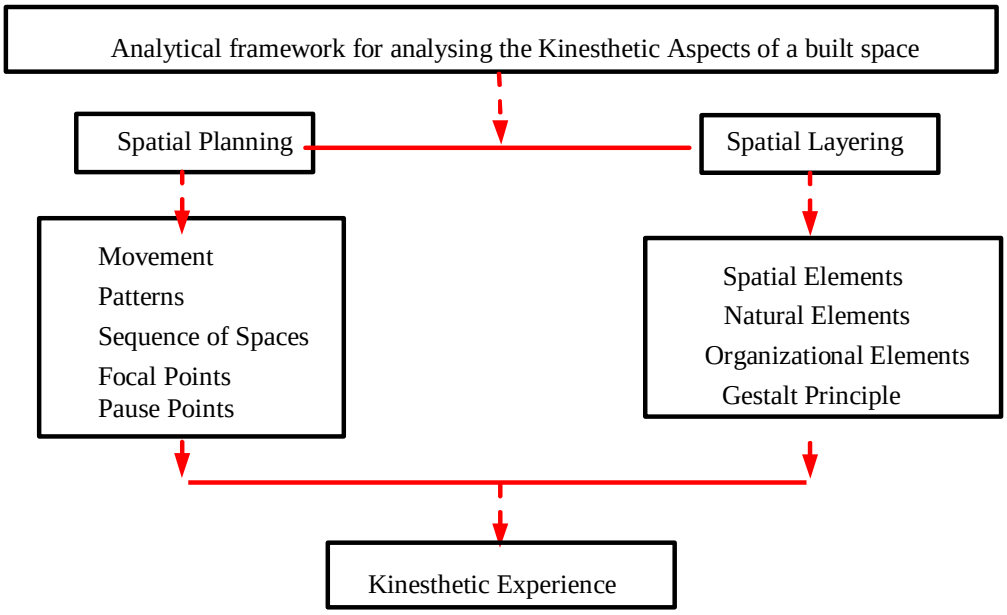
Fig. 2 Humayun Tomb interior

II. ANALYTICAL FRAMEWORK FOR ANALYSING THE KINESTHETIC ASPECTS OF A BUILT SPACE

This research method is formulated from literature studies. The building research is divided into two sections: Spatial Planning and Spatial Layering.

The analysis of spatial planning involves the study of patterns of motion, order of spaces, pause recognition when traveling, and the plan's focal point.

Although spatial layering consists of the various elements that will be examined in each spatial frame, spatial, organizational, natural elements and the concept of Gestalt are followed. They build a sense of kinesthetic experience in the constructed space.



A. Decoding the path of movement

1) *Movement Pattern:* In accordance with the role of the building and the socio-cultural structures swirling around it, the movement pattern varies. The movement order depends on the pattern of the movement.[4]
2) *Order of Space:* The order of spaces is nothing other than spatial layering. The order of motion depends on the allocation of spaces or the order of spaces. Generally, a threshold space marks the bifurcation among two spaces.

3) *Pause Points:* There are some points where you can pause and comprehend space that can be referred to as pause points when moving through a space. When moving through a space, there are various types of pause points. The points where an altitude change or change in the spatial frame occurs become pause points. Some components appear to stand out from the various elements of a spatial frame, which has become the focal point and defines the length of the pause.
4) *Focal Points:* The factor that attracts one's attention when moving through a constructed space becomes the focus point. The multiple spaces of a building have several focal points. There are often several focal points in the same area. So the pause point is simply dominated by a focal point as it is the cause behind the pause. When seen from the point of pause, the focal point is nothing but the view. So the pause point is actually dominated by a focal point, since it is the reason behind the pause.

B. Deciphering Spatial Layering And Spatial Frames

1) *Spatial Elements:* Roof - It means a shelter. Which implies volume. Wall - a vertical plane dividing the enclosure. Floor is a horizontal plane that serves as a reference for all the other components in a space. Stairs - A spatial feature that regulates the vertical transition between two horizontal planes of space. Window - A visual link between the world inside and outside. Door - A punch into an aircraft that allows passage through it. Column - a structural member that can also be used as an element of space making.[4]
2) *Organizational Elements:* Axis - a line that separates spaces and space can be organized on the basis of it. Symmetry - This space becomes symmetrical as the axis splits a space into two equal mirror images of each other. Hierarchy – If, by its size or its placement, a form is given more importance than others then hierarchy exists. Rhythm - a patterned recurrence. Datum - a form which binds other elements of space. Transformation - in a singular form, shifts. [4]
3) *Natural Elements:* Natural light - Natural light brings a different sense to space and is fluid as the quality of light varies according to the day and weather. Landscaping - Landscaping gives the designed area a human touch. Water - The water body relaxes the core along with the cooling of the wind. Wind - The natural wind from outside the building, when passing through a space, is calming for people. Temperature & humidity - The efficiency of the transition from one space to another depends on the temperature balance that it provides when moving through a building. Rain - While occasional, the rain flow stages influence the perception of a person.
4) *Gestalt Principles:* Similarity - Objects with a colour and size similar in form are viewed as a single element. Continuation - The Human Eve follows a design's paths, patterns, and curves, and tends to see a continuous flow of visual items rather than separate objects. Closure - If the visual elements are not complete, by filling in the missing visual details, the user can perceive a complete shape. Proximity - Basic shapes in close proximity to each other are seen to form a more complex picture in combination. Figure/Ground - Types are separated from backgrounds by the human eye. Symmetry - As a single entity, components that are symmetrical to each other are viewed. In symmetrical compositions, the concentration is constant and they are thus easily readable. [4]

III. CASE STUDY SELECTION

The main aim of this paper is to research the variables that form the individuals' kinesthetic experience when moving through the building taken. These cases are good examples of exploring such variables. Since all three buildings are different styles of public (assembly) buildings of differing scales, they have differently addressed motion, we can actually recognize the critical factors that impart a rich kinesthetic experience through them by observing the three different buildings.

IV. COMPARATIVE ANALYSIS

A. Movement Pattern

Fig. 3 Gandhi Aashram movement plan

1) *Gandhi Ashram:* The course of movement is linear from where it bifurcates in two directions until the water court. In a grid iron pattern, the expected design, the movement through the building often follows that pattern. Although the pattern of motion can be rigid, one tends to meander through the building because of the interplay of the open courtyards and the passages to the sky.

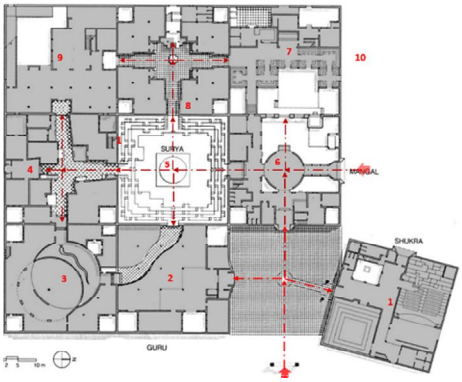


Fig. 4 Jawahar Kala Kendra movement plan

2) *Jawahar Kala Kendra:* A combination of multiple linear paths is the direction of travel. The two linear paths carry you to the entrance plaza before entering the complex. The motion occurs axially from there, as per your preference. The movement becomes linear again once you have set a course. This movement is vital to the central courtyard and it becomes a significant junction to redirect individuals.

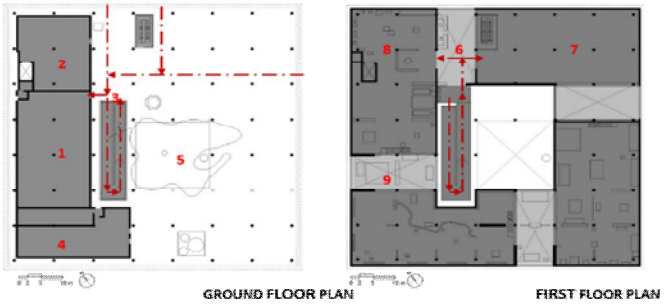


Fig. 5 Sanskar Kendra movement plan

3) *Sanskar Kendra:* A combination of numerous linear paths at the level of the stilt floor is the direction of travel. The one linear pathway takes you to the first floor reception area when you approached the ramp. From there, as per your preference, the motion is diverted in two directions. The movement becomes linear again once you have set a course. The central opening to the sky courtyard at ground floor level is a significant focal point.

B. Order Of Spaces And Pause Points

Fig. 6 Gandhi Aashram focal and pause points

1) *Gandhi Ashram:* While there is no physical obstacle, due to the notable changes in the motion pathways, the three distinct pathway declares itself.

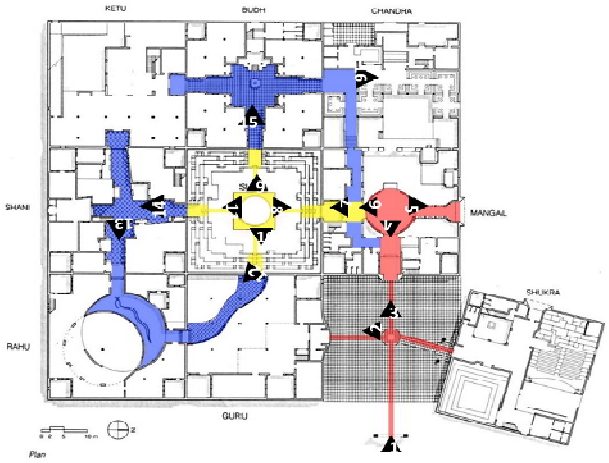


Fig. 7 Jawahar Kala Kendra focal and pause points

2) *Jawahar Kala Kendra:* There is also a threshold in this building that clearly marks the separation of the various paths, thereby providing various different paths and pause points.

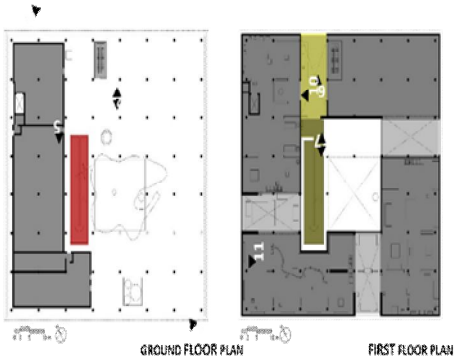


Fig. 8 Sanskar Kendra focal and pause points

3) *Sanskar Kendra:* In particular, the threshold marks the division of the various directions of motion, thereby dominating the order of movement and points of pause.

C. Articulation Of Spatial Frames

1) *Gandhi Ashram:* In this construction, the square modules with pyramidal roofs become a spatial motif. Because of the repetition of the spatial components, the sense of layering becomes explicitly apparent. The spatial elements are consistently identical and often similar in the articulation of each distinct spatial frame. The movement through the spatial frames takes place through these modules or towards them. The courtyards in these modules become variations and become spaces for reflection when traveling. The interpretation of the afterimage is very high because of the resemblance between the spatial frames. In order to balance each other, the pause points and the focus points are precisely choreographed.

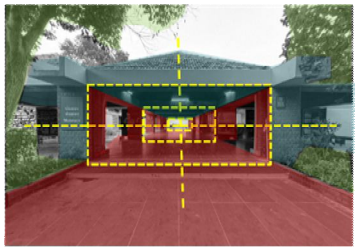


Fig. 9 Gandhi Ashram main entrance

2) *Jawahar Kala Kendra:* In this structure, the square grid planning and blank wall become a spatial motif. The motion through the spatial frames revolves mainly around and around this square grid. The blank wall with only one opening provides a sense of surprise between the various spatial frames and allows a person to communicate with it. Such an occurrence often causes the after image to be inconsistent and it invariably becomes a pause point if the wall articulation changes. A specific approach to the articulation of each distinct spatial frame and the variation between the spatial elements is available. In contrast to the outdoor areas, the speed of travel is quicker when walking through the long linear passages in the indoor spaces. On hitting the large laterally dispersed outdoor areas, the length of the pause point is amplified.

Fig. 10 Jawahar Kala Kendra entrance

3) *Sanskar Kendra:* The round shape column becomes a spatial motif in this building along with other spatial components. This enables an individual to correlate the various spatial frames. Through the numerous spatial frames in this Sanskar Kendra, there is a harmonious experience. The unique articulation of each distinct spatial frame and iterations of the spatial elements are present in this complex. Due to the spatial elements' similarity. In this building, when standing in one space, the afterimage, the pause point and the focus point are explicitly evident. The ambiguity of the various frames is subdued by this factor and the action is therefore easily understandable. Each turn brings on a completely distinct spatial frame when walking through this complex. Owing to the differences in the articulation of certain spatial components, the variety is actually felt, which helps to make and space special, giving the individuals traveling through them a rich kinesthetic experience.

Fig. 11 Sanskar Kendra entrance lobby

D. Scaler order

1) *Gandhi Ashram:* Due to the replication of the similar square module, there is a scalar uniformity in the entire structure, which gives the people crossing through it a clear sense of continuity.

Fig. 12 Gandhi Ashram section showing scale

2) *Jawahar Kala Kendra:* There are significant differences in the scale between the various spatial frames, that's why you have a different experience when you walk through every space. The difference varies from a monumental to a minimal one in the scale.

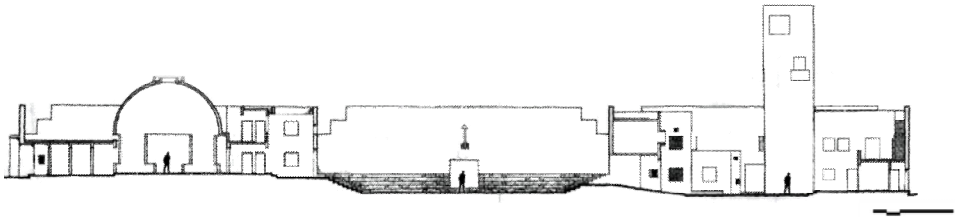


Fig. 13 Jawahar Kala Kendra scale variations

3) *Sanskar Kendra:* Also within a single court, by staggering the various spatial components, there are differences in the size. A scalar progression from one spatial frame to the other is also present. Hence, this multiplicity inevitably benefits a person traveling through these spaces.

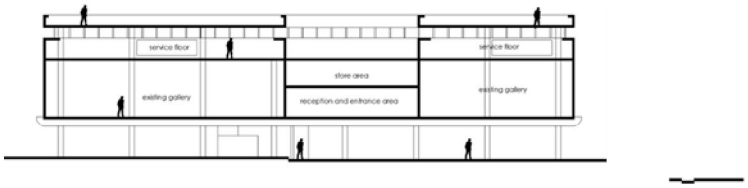


Fig. 14 Sanskar Kendra section

E. Approach Towards Symmetry And Continuation

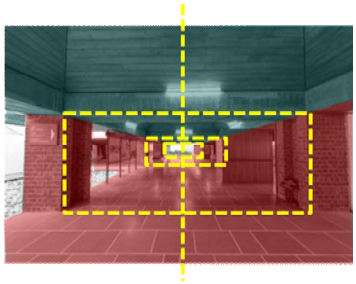


Fig. 15 Gandhi Ashram visual frame

1) *Gandhi Ashram:* Symmetry & consistent continuity. There is a symmetry and a consistent consistency between the various spatial frames that allows an individual to meander when moving along a particular path.

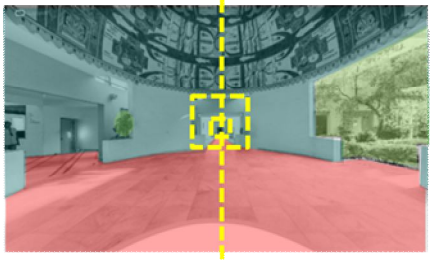


Fig. 16 Jawahr Kala Kendra visual frame

2) *Jawahar Kala Kendra:* Symmetry & continuity. The clear symmetry in this case helps preserve the consistency between various spatial frames. Thus, when moving through various parts of this building, one does not lose concentration.

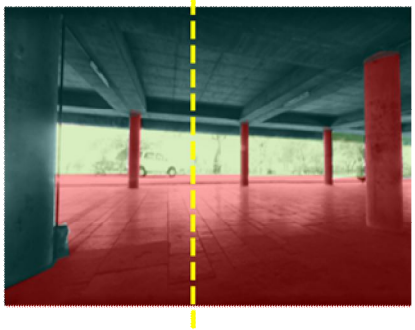


Fig. 17 Sanskar Kendra visual frame

3) *Sanskar Kendra:* Symmetry & continuity. As the axis constantly moves, there is an inconsistency in terms of symmetry and continuation of the spatial frame. But there is an exploratory experience for a person going through these spaces because of this.

F. Approach Towards Natural Elements, Natural Light

1) *Gandhi Ashram:* By offering intermediate courtyards, the indoor spaces have been combined with the outdoor spaces. Therefore, there is an interplay of light and shadow along with points of high contrast that facilitates pauses when moving.
2) *Jawahar Kala Kendra*: The indoor and outdoor spaces have been articulated in such a way that between them there is a light contrast. Therefore, even the perspectives and the pace of walking inside and outside the building differ considerably.
3) *Sanskar Kendra*: One of the key reasons for the involuntary delays when going around the various spaces in this building is the periodic play of light and shadow.

V. CONCLUSION

A. Recommendation

1) *Spatial Organization:* The spatial organization of a building should be conscious of the resulting pattern of motion. There should be versatility in the spatial organization for an effective movement in a space, so that people can pause, deviate, and ponder in a specific space. This can be achieved by breaking down the motion path into smaller parts, separately addressing each part. In order to break the monotony, long passages need some kind of interception. The implementation of various spatial elements or winding of the path proves to be very effective in doing so. The threshold space often serves as a bridge between two separate spatial frames and helps to stitch each of them.
2) *Pause Point and Focal Points:* In reality, the order of movement in a space is determined by the probable pause points and their respective focal points, along with the building's spatial organization. In and particular spatial frame, the pause points and focal points need to be explicitly discussed when constructing a building, so that they are in harmony with each other. The afterimage and the following frame are directly affected by them. Each effective frame has a different focal point and the focal point's level of complexity or prominence defines the time spent in that specific space.
3) *Spatial Frame:* For the development of a sequential and multi-layered experience, breaking down the entire path of movement into smaller spatial frames is important. The views seen from the pause points are such frames. For a sound kinesthetic experience in a space, visual coherence and inter-relativity between the various spatial frames are also crucial. In relation to the previous image, the recurring afterimage helps a person understand the other spaces. While the expectation of the succeeding frame facilitates the frontward push. Although the various spatial layers are not seen as independent exclusive entities, we do not. But when we pass through a space, our perception is influenced by the spatial, organizational and natural elements in accordance with their prominence.
4) *Spatial Elements:* The multiplicity of spatial elements adds to a building's complexity. However, with the repetition and iterations of similar spatial components helps the efficient readability of the spatial frames, while being distinct from each other. The relative motion of the observer and the objects observed depends on the spatial elements being articulated in space. Relativity between the various spatial frames is necessary for the successful flow of motion between these spaces. A spatial motif repeated in various parts of the building allows an individual to relate to various spatial frames and becomes a means of continuing the image afterwards. The simple repetition of a single spatial motif between the various spaces in a building is dependent on the building's image ability.
5) *Gestalt Principles:* The movement becomes more meaningful if the Gestalt principles are viewed together with the organizational elements. Symmetry allows a person to maintain concentration in a building between the various spatial frames, thereby acting as a servant element directing the movement and the focal point. The motion in symmetrical spaces is more rhythmic as well. Strong continuation is a dominant factor that ensures frontward movement and affects an individual's walking pace. The spatial layering helps to break down the space into several layers, thereby assisting the frame to begin. When they are aligned with the axis of movement, continuation and symmetry are most prevalent.
6) *Scale:* The variations of the scale when traveling through the various spaces in the building play an important role in influencing a person's kinesthetic experience. The scalar progression from smaller spaces to larger spaces and vice versa is also an effective tool to allow an individual to pause or step forward. By increasing its size, a sense of grandeur can be imparted to a space, while you can be humbled while moving through a smaller space.
7) *Natural Elements:* The natural light that actually pervades inside a space often modifies the actual shape of the space and gives it a different perspective. It is the natural light that pervades inside the building several times that generates a contrast and separates two similar spatial frames. The continuity of motion is intercepted because of the presence of natural light, since light intercepts the direction of motion. This interception, however, only improves one's experience when moving through a space. The movement can be directed even by the careful juxtaposition of trees, shrubs, waterbodies, etc.

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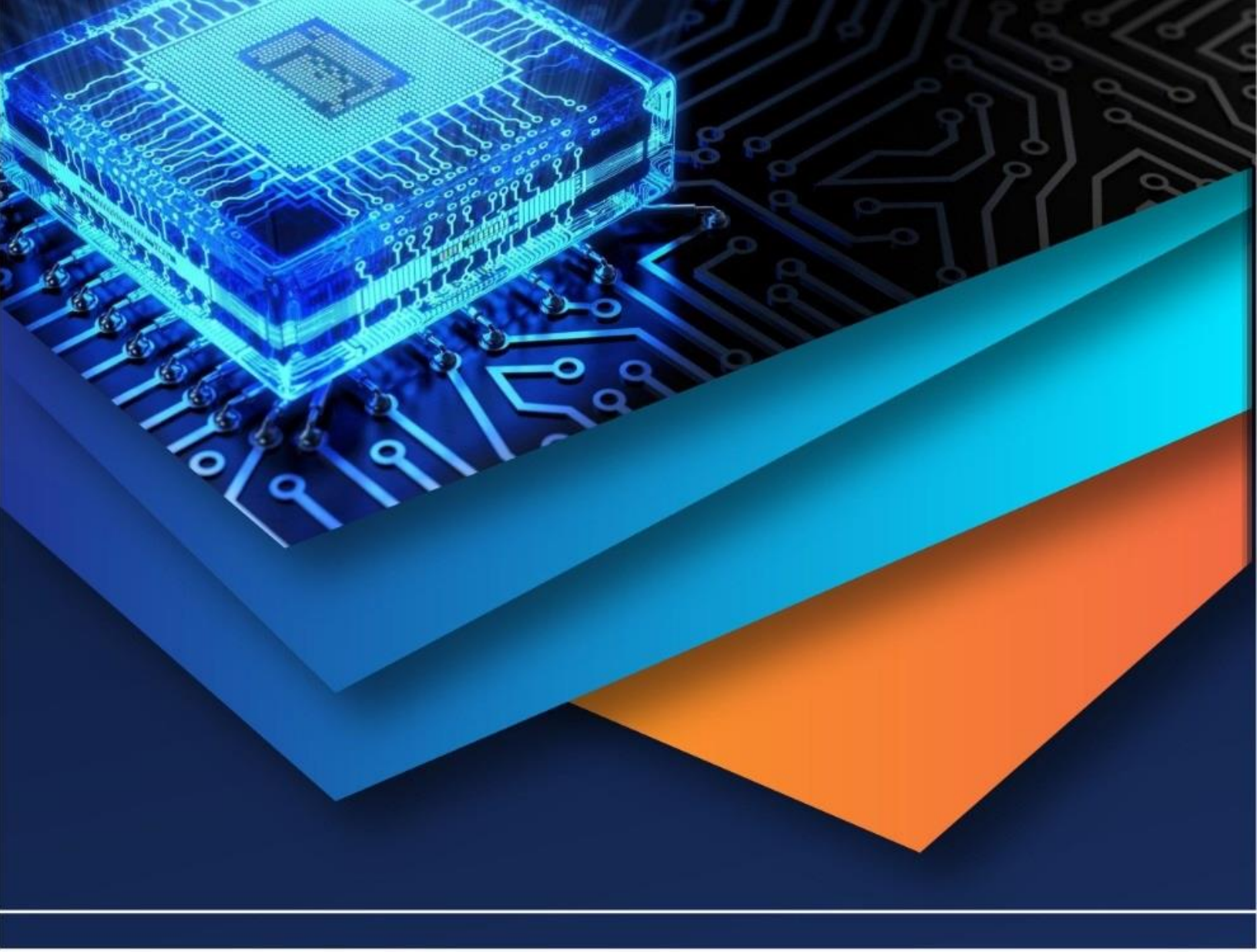

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