A creation in abstract 3D art inspired from Pavo muticus imperator

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Article Info

ABSTRACT

Creation of art as abstract art by choosing a three-dimensional (3D) art form to be used for creativity, has brought the characteristics of the peacock inspired by its forms, color characteristics, including its habitats to be used as a mixture and elements in creating this art. Therefore, when combined with the key elements of a 3D object with depth dimension of the object in the Z axis, adopting the colors of the space and the atmosphere of the peacock's habitat to the surface of the 3D pieces, which provide creative approaches and techniques that enable abstract 3D art to be realized by the shapes and formed by perspectives as a whole. Z-axis can create directions to display hundreds of perspectives. In addition, the colors that have been used to blend in with the 3D objects create beauty inspired by the colors that can be found in nature. The peacock's art has been passed through with the distinctive features of 3D objects, resulting in creating such abstract 3D art pieces.

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1. INTRODUCTION

Today's artworks come in a wide variety of genres and can be created independently and can express more artists' needs. This allows artists and creators to express their ideas freely. The creation and design of works naturally inspired the human-created works of art. Which the shape, sound, pattern, or other designs that are inspired by nature all contribute to creating art that extends the idea to enhance aesthetics and also results in those designs that are accessible and beneficial to humans as much as possible. Another interesting aspect is the difference in human reaction to natural and artificial objects, distinguishing which features make an object appear natural, and how this can influence the design process. It is digital technology that enhances visual impact [1] and aesthetic value Artists derive design work from nature, but presenting designs derived from nature also creates a sense of aesthetics and conveys the imagination to the viewer. Nature also has the beauty of the colors that create many works of art. Take peacocks as an example. It is a beautiful, colorful animal that exists in nature with a unique identity. Animals and plants are not artists, but these same constraints for order result in form, symmetry, integration, sweep and curve, and these results can please aestheticians, as with dragonflies and humming birds in flight, or impala on the run [2]. The Thai peacock or

green peacock is a peacock that can be found in many places in the area, especially in the Northern region of Thailand, such as the Ping, Yom, Nan and Ing basins [3]. Peacock is considered a species of animal that shows the abundance of forests and natural resources, especially in the Ing River basin. A group of green peacocks has been discovered in the northern region of Thailand, where numerous peacocks are found at the Ping, Yom, Nan and Ing River Basins [3] At present, the green peacock or Thai peacock is considered as species of animal that are likely to be extinct in the world (Vulnerable Species). According to International Union for Conservation of Nature (IUCN) 2009, the beautiful appearance and appearance of peacocks means peacocks can still be found in a wide variety of sculpture art as an element that conveys beauty, including the belief that the peacock is a sacred animal. Also, Lakshmi and the god of war, Skanda-Kartikay, also rode on peacocks. The beautiful peafowl were often on the steed of deities [4]. It can be seen that peacocks have influenced their way of life beliefs and coexisted with human beauty and design for a long time. By the way of creating ideas and conveying creative arts, there are many tools used in art creation today that help people to convey their imaginations and creative ideas more, including pictures.

Art forms and approaches have emerged to support many more innovative art creations, which includes creating art in the abstract art style. By using this form of art technique, artists can create designs in free form without rules or any frameworks that require the use of feelings conveyed to present ideas and ideas of artists who have guidelines and tools in "Unlimited Creativity" as well. Creating art by using 3D design programs is one of the most suitable and widespread tools today with support for both creation tools. Software for creating art, including the techniques, the space, and freedom, has transformed art and artists into an innovative and creative genre called 3D Art. This form of art is increasing and becoming very popular nowadays. Therefore, the use of multimedia technology is very useful. This is also supported by the researchs in the field of education that applies multimedia technology for learning are growing rapidly [5].

From the information mentioned above, the researcher came up with an idea to create abstract 3D art using patterns and inspiration from Thai peacocks, which are considered animals with natural beauty worthy of care and conservation. The combination originates from the distinctive features of 3D elements used to create artworks by using abstract 3D art as a tool. So in this digital age, the use of high-tech can reserve the skills of national art for us [1]. This will be another method and approach in creating art, and a means of communication that helps to see the form and beauty derived from nature as an inspiration then leads to aesthetics and conservation in nature like the peacocks, which are animals that are beautiful and worthy of conservation.

Study the characteristics of the green peacock in order to apply the characteristics and strengths to the shape design. By using the line design principles of artistic elements to create and design to create a shape that conveys the identity and character of the peacock. From the creative and design process. Create pieces that are shaped to be Abstract 3D art. From peacock-designed shapes using the techniques in properties of the layout and the specific properties of 3D objects in different perspectives and view art. Using the program for creating graphics and 3D.

2. STUDY AND ANALYSIS OF THE CHARACTERISTICS OF THAI PEACOCKS

According to the Thai peacock or the Indochinese green peafowl's characteristics in nature (Indochinese green peafowl: Pavo muticus imperator), the feathers covering the wings are dark black, the tips of the fur are dark blue or greenish-blue, the fur on the flanks is iridescent black and is found in central and southern Yunnan province of China, along the Salween River in Burma, Laos, Cambodia, Vietnam, and in Thailand, in the western forests, the northern forests, and in the southeastern protected area. The crest is erect, tufted, leather on the face, and its feet are blue and yellow For a male Thai peacock, its tail is under the extended tail feathers, and is shaped like an eye on the tip of the heel.

2.1. Male characteristics

The male's character is the distinctive and distinctive feature of peacocks around the world, and the well-known and well-recognized image of this family of animals makes it a representative image of grandeur and beauty. The unique and distinctive features of males are as shown:
- Head: The mouth is dull brown; the iris is brown; the skin on the face which coves from the ear to the mouth; the color around the eyes is light blue and surrounds by bright yellow; the color of the feathers between the mouth and eyes (lore) is dark blue for the males, and dark brown for the females; the forehead, pharynx, and the nape of the neck is protected by short feathers with a mixture of three colors yellow, blue, and green.
- Neck and body: The color of the feathers on the body is generally iridescent green, which varies from species to species; the color of the feathers on the neck, upper back, and chest spread wide and has rounded ends; in between the feathers, there is another color, which is dark blue, and it gradually fades

to green on the sides; on the edge, there is another color which is iridescent copper; the inner line is gold mixed with green and there are green and black dotted stripes on the tip of the feathers like fish scales; the lower back is iridescent green and copper; there is a brown V-shaped stripe around the blue line with a black tip; the belly and the sides of the belly are dark green; and the rump is dull gray.

-   Wings round-shaped wings with the color of brackish brown gradually fading towards the end; iridescent blueish green feathers covering its shoulders; the feathers covering the third wing are striped with black and brownish yellow colors. The second layer of the wings has a blackish brown inner web with blueish green outer web; the first layer of the wing feathers or the tip of the feathers is reddish-brown.
-   Legs the color of the feathers covering the legs is dark black with normal brown stripes; the shins and toes are featherless and brownish black; the spurs of male peacocks are about 3 cm long.
-   The feathers covering the lower tail are grayish black; the tail feathers are blackish brown with brownish yellow stripes; male peacocks have 20 tail feathers, which female peacocks have 18 tail feathers; for the males, the upper tail extend outward to help them in their mating season, which is done by fanning out their tail feathers in a semicircular shape; the feathers covering the tail will have glint of Mayura which is on the middle section of the feathers; the outer margins, whether it is the lower part (sword-shaped) or the upper part (shaped like a fish tail), they do not have the same look or glint of mayura like that of the middle feathers.

2.2. Female characteristics

From the tip of the beak to the tip of the tail: 1,000-1,100 mm., wings: 420-450 mm., tail: 400-450 mm., crest: 40-43 mm., and shin 135-145 mm. Females are darker than males with blackish brown stripes scattered throughout the neck, back, and wings with black stripes; the tail feathers are golden green with a mixture of light brown and black stripes; the wing-tip feathers except the shortest line are reddish-brown with black stripes all the way to the tip of the black tail feathers, and brown stripes colliding between the mouth and the dark brown eyes; the color of the skin on the face is not as bright as the males and shorter spurs. The two-year-old male green peacock resembles an adult male but the tail feathers are short and no mayura like one-year-old males, which are different from that of the two-year-old males-the colors are not bright and the tail feathers also have faded stripes that can be distinguished clearly; females have a slender body and long legs, reddish-brown wingtips without stripes, and blackish blue feathers between the beak and eyes.

3.   NATURE AND INSPIRATION TO THE ART

In particular, potentially useful sources of inspiration or information can have the effect of constraining rather than freeing the designers' imagination [6]. It happens through observation, touch and recording, which is one of the most important factors in creating for many humans. Nature-inspired design strategies are design strategies that base a significant proportion of their theory on 'learning from nature' and regard nature as the paradigm of sustainability [7]. It represents access to the beauty that surrounds human beings. Seeing the beauty of nature allows humans to be creative, which is a stimulus for imagination as well, because when we appreciate the safety, aesthetics, and creativity, it can occur efficiently. On these grounds, it is reasonable to claim that designers of everyday technology need to be aware of the values they bring and of the conventions that they support, as the mainstream design paths are being strengthened and the upcoming design possibilities narrowed [8].

An idea can take many forms, varying from a specific visual effect to an intellectual communication of a message. Source material can come from anywhere; it needs only to inspire and generate creative energy (Visual communication III 3D design principles) [9]. The things that lead to the creation of nature, such as lines, colors, points, shapes, shapes, and light, all arise from the inspiration that the broadcaster has encountered, and want to pass and convey feelings or what is happening in their imaginary mind. Then forward those concepts and ideas to the recipient to understand and perceive, which comes out as a work of art, which may require the use of different tools, materials or media according to their interests and aptitudes of artists to convey and communicate whether it is art, painting, sculpture, building, color, product or even other appliances. Nine characteristics of creativity have been identified in current reviews of design creativity: expertise, motivation, goal orientation, values, creative thinking skills, flexibility, design thinking, individual traits and thinking styles [10]. Physical-level inspiration requires viewers to analyze the physical aspects of artworks and to reflect on the physical aspects of their own art making. This type of inspiration leads viewers to change physical aspects of their creative works [11]. Descriptive phenomenology would enable the description of designers' subjective perceptions of inspirational material,and show how perception of affective quality could emerge as a distinct psychological constituent of that overall perceptual experience, depending on specific design inspiration scenarios [12]. When creative ideas are driven visually and meet the

tools to convey to create a artwork In addition, when the inspiration is sent to people with other abilities, they can create and convey according to their talents and abilities, not limited to artistic tools [13].

4.   ABSTRACT 3D ART

We know that art has developed and strengthened in line with technology and the changing of the world, which has produced more and more diverse forms and approaches. In its broadest extant sense, "digital art" refers to art that relies on computer-based digital encoding, or on the electronic storage and processing of information in different formats-text, numbers, images, sounds-in a common binary code [11]. Abstract art or Non-realistic art is an art that arises from the creativity of the artist caused by emotion using color, and lines to express themselves and cut things out of nature into simpler shapes. To convey human feelings towards the natural surroundings, the artist presents his ideas creatively and freely with an emphasis on the freedom of line and color [12]. Art and design is a broad discipline, which occupies the complete attention of creativity, function, expression, form and composition. The meanings and explanations of art and design differ in so many ways. Most creation and production involves a large technical research component, leading some to refer to new media as a research practice as well as an arts practice [14].

Abstract art is also a method that attracts people to become interested in art of all ages because it is not only artists who unleash their imaginations into works of art, the viewers of art also release their thoughts or imaginations to reach the artists' emotions while viewing art as well. It is the fun and charming factor for this type of art. According to Muyanja Michael these motifs appear with decorative designs or patterns, which display conceptual visualizations of shapes, forms, colors, and textures. The challenge is whether an automated computer graphics system can possibly produce appropriate abstractions of human figures. We are faced with an immense amount of prior knowledge that humans use both to create and to interpret these images [15]. Using 3D tools for the artwork is another way for people to convey art in the modern era by living closer to the computer equipment and digital tools, which is the way of life of today's people. Computational aesthetics do not arise from a void; it is of course part of society, culture, and economy-if we can, for a moment, accept the ruse that these things are adequately nameable [16].

Artists can now enjoy all the benefits offered by the computer and an improvement of digital technology. We could highly develop the unprecedented innovation of technology even more in a blink of an eye [17]. It is another help that allows people to access and convey the beauty of the art in their imagination more easily and suitable for the tools and equipment that exist today such as computers that play a role in the daily life of many people.

5.   METHOD
5.1. Procedures

The process of creating this work is based on a form of artistic and visual art creation. which can be divided into 3 proportions, which is the research,concept and the production creation process can be divided in order as shown in:
-    Step 1: Study the characteristics of green peacocks in Doi Phu Nang area from research papers, research textbooks, research data and information from various media.
-    Step 2: Use the data from the study to create shapes and patterns from the green peacock into stripes. Then bring the two-dimensional lines to a design expert for examination.
-    Step 3 Take the shape obtained from complete shape analysis and attenuation to create a three-dimensional structure and arrange the distances.
-    Step 4: Bring the obtained 3D structure into color by choosing a color scheme from the Peacock color scheme to use as the main surface color of the piece of work, and choosing color for the surrounding environment from the Peacock's habitat.
-    Step 5: Summarize the data and the results of the artistic creation.

5.2. Tools and programs for creations creative tools are in the group

Design and graphics-related software that has two groups of formats: 2D line drawings and 3D creations. The program may be modified at your convenience. The designer's aptitude and needs are not limited.
-    Adobe Illustrator CS6-A tool for creating outlines.
-    Autodesk MAYA 2020-A program for creating parts for 3D molding and lighting.
-    Adobe Photoshop-A program for editing and retouching images and colors.

6.   TECHNIQUES AND THEORIES APPLIED TO THE DESIGN

6.1. Principles of creating lines and patterns

Some of the principles visual/creative methods by Carole Gray and Julian Malins [11] regarding the visual/creative methods have been applied to the creation of this artwork. These steps and processes can be applied and used to create a guideline for producing and creating designs. Including other related forms of work; i) Observation-to watch something/someone/an environment/situation closely and accurately record the activities/situation to capture data relevant to the research project issues; ii) Visualization Visual thinking-to make ideas visible through a range of techniques to explore research project issues and/or present research findings; iii) Sketchbook-A portable book or bound collection of sheets that contain the development of ideas over time, and subsequent reflection and analysis; may include a range of visuals and notes, and other contextual references; a 'digital sketchbook' may be more appropriate for some practices; vi) 3D Models/maquettes-three-dimensional experimentation of the research project issues with materials and processes

The production of a 3D model asset has 2 main steps: i) it starts with the creation of pieces of concept art, which is a 2D illustration to convey information of a visual structure such as characters, and ii) scenario props [18] (3D 'sketching', envisioning) that may cause a range of 'approximations' (various versions of maquettes) towards a more resolved construction/object; sometimes, a scale model may be required. By increasing the use of technology, it allows the rise of sophisticated computer modelling.

6.2. Use the 3D elements of design criteria

Using the elements on the peacock to create a digital art work which consists of Form, Shape, Line , Dots, Mass, Volume, and Texture. Light By used The unique lines of the peacock to create lines. and taking into account the use of lines to create and form a 3D shape that will have other elements added to make it more complete. Geometrical elements are expressed as point, line, suface and space. "Geometry is related not only to the measurement of surfaces but also to all braches of art [19].

The result of creating a piece of proportional figure from the 3D morphology of a male peacock that has been adjusted and positioned to be the appearance of a peacock. The result of creating a piece proportional figure from the 3D morphology of a male peacock that has been adjusted and positioned to be the appearance of a peacock. In Figure 1 shown below is a work piece using the aforementioned techniques.
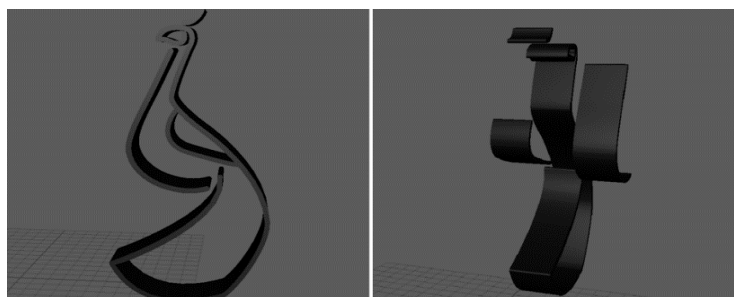

Figure 1. The level arrangement and position of the pavo muticus imperator character parts
in the Z-axis in a 3D program

6.3. Creative techniques using featured elements of 3D objects

The highlight of the 3D object is that there are X, Y and Z axes of the object. The creator has used the Z axis positioning to make the use of the 3D object's strengths to have different levels of shapes that cause layer differences. Analyzing the diversity of proposals from a technicaland narrative point of view is a necessary task, due to the heterogeneity and constant reformulation of content [12].

The object's perspective allows the form and perspective of the object dimension from the original view plane to be a 2D perspective when moving only the Z-axis [14]. Working in 3D also solves the problem of perspective shift-objects are built as truly 3D elements and therefore can be viewed from any angle enabling the created artwork different by adjusting the direction of vision from many angles to create a variety of characteristics and shapes in each direction from the original point of view. The synthetic pieces of concept art were extracted from 3D models made by a 3D artist and rendered following the concept art pattern: three views captured by a camera of orthogonal projection [17]. Visual elements include graphics, typography, colour, size and shape of the packaging, while the informative elements refer to the information and technology [15]. In both conception and execution, digital images require programmed designs with

corresponding experimental flexibility-a flexibility that goes far beyond the mere elimination of 'intolerably tedious' repetitive procedures [16]. Properties of 3D objects in unequal shapes. Each aspect of the visualization that is a 3D feature is that the X, Y, Z axes are differently rendered in shape. The real three-dimensional image is produced by optical refraction, which can make the eyes see the three-dimensional relationship of the object up and down, left and right, and front and back. It is a three-dimensional image in the true visual sense [20].

6.4. Techniques for selecting colors in work of art

The researcher used the technique of selecting a color scheme from the specimen by selecting the dominant color scheme of the peacock image to be used as the main surface color of the 3D specimen and then sorting the colors from the highest to the lowest amount. Then use the gradient color mixing technique to create the color of the object surface as well as the color of the scene environment. By choosing the image of the Declduous dipterocarp inhabited by peacocks as the surrounding atmosphere to reflect on the material surface of the shape to be more beautiful from the shades of colors reflected on the material surface. In Figure 2 shown is an image that was used according to the techniques mentioned above.
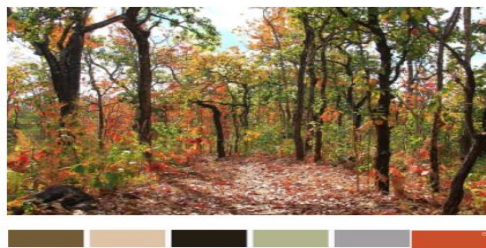
Figure 2. A color palette from the Deciduous dipterocarp forest and using the tool to select a color palette from the original Declduous dipterocarp forest, which is the peacock habitat

The researcher has chosen the shade, which is used in this research, to be an object that has a reflective, shiny appearance that can pick up colors from the surrounding environment well, such as choosing a material glass material, metal material or chrome material uses the reflection property as a composition to allow the ambient light of the scene to blend with the object [17]. The shades and other algorithms handle these handle the indirect light from them. But if a surface is very shiny, it becomes like a mirror and directly reflects all the light it receives so that you have an image of its surroundings. As a form of experiment, i tried to re-invent the computer-generated marks/shapes in developing my imagination and interpretation from the motifs of illusional landscapes and memories [20].

Adjusting the rotation, camera angle and perspective of the 3D scene to get the perspective of objects that have been aligned on the Z axis at multiple angles, the researcher can choose from a variety of perspectives resulting from lines. The presents study found that 3D-computer-aided design (CAD) significantly influenced student cognition, representation, and creative expression. How-ever, reification emerging during this intervention may have negative effects on creative performance [21]. In addition, each point of view also receives different light patterns and line characteristics, allowing for the diversity of a single piece of work from different perspectives. If the stories are presented with different plots in the same space-time,the situation varies, and its expressive dimensions increase exponentially: which plot do we want to see? [12]. Because the artwork design workpiece is a modular structure in hole geometry, separation of parts and gradations of space allows for greater flexibility and freedom in the design work. Whether it is digital art or traditional art they are both art. The differences between the two are the media you use [22]. Creating geometric relationships and playing with them efficiently to explore shapes requires knowledge about product features, aesthetics intuition and imagination. Generative systems may help designers to be more creative, but designing and modifying them also needs creativity [23].

Techniques for selecting colors in work of art. The researcher used the technique of selecting a color scheme from the specimen by selecting the dominant color scheme of the peacock image to be used as the main surface color of the 3D specimen and then sorting the colors from the highest to the lowest amount. Then use the gradient color mixing technique to create the color of the object surface as well as the color of the scene environment. The results are shown in Figure 3. Adding elements to 3D parts and objects helps to make work more beautiful and complete by adding elements like textures, 3D parts materials, volume, and lighting. A piece of work which may have other elements and other factors added according to the needs of the creator in order to help the creative work more complete.

Figure 3. A complete 3D shape all put color, materials, and environment color

From the results in Figure 4 to adjust the view, rotate, change the display direction. which is a form and method that can be used and created well in the properties of 3D pieces by 3D programs, which may take into account the direction and perspective that makes the angle of the object proportional wider or in A different angle seen before by this step is an independent adjustment of the creator. In cases when they do perform transformations, they transform primarily visual-object properties (e.g., color, and shape) of their images, but not purely visual-spatial properties (e.g., rearranging the visual-spatial structure) [24].

As shown in Figure 5, 3D model of a peacock's female designed object. Rotating the shape in this form, the creator has repositioned and rotated the object prominently in depth, the Z-axis of the 3D view as the main axis. However, these are hidden from view and are transformed into visual imagery that offers the viewer with a psychological and physical experience [18].
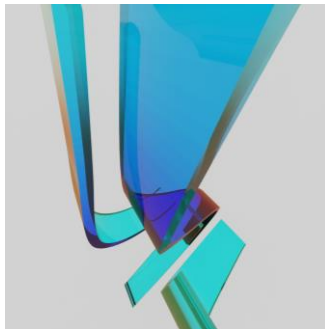
Figure 4. The pavo muticus imperator (male) character shapes in each direction from different point of view

Figure 5. The pavo muticus imperator (female) character shapes

It can be seen that the creation ad apply of design ideas can help the artwork to be more fun and expanding. Incorporating distinctively different components is one option that allows them to create value in a new way by reorienting their presentations. Visual communication is an advanced medium, or a 'fill' of shading, shape, or surface area, in a mechanical press. It can be natural, mathematical, hard-edged or feathered, theoretical, or symbolic and can be used about various components to make a structure or example [25]. Many visual artists feel that their visual images are generated not of their own volition and that their images come from an independent objective reality-an "image-space" that persists beyond and independently of the individual [26]. This is to help reduce the pressure and rules for creating and designing for interested people to have access to a wider range of creative and artistic values. The rewards of accessing and creating art are well established for creators, as has been seen and seen in a wide range of research studies using art to heal people.

7.   CONCLUSION

From the research process and procedures, it was found that Works of art that show the distinctive colors and uniqueness of the pavo muticus imperator as well, which the use of such colors in the shape created by the inspiration and beauty of the peacock in abstract 3D art style. The resulting shape is neither

specific nor will it reflect the design of the peacock as its main, classy shape: curves, visual distance, weight of light and shadow. When placed and adjusted to a variety of perspectives, it creates a unique look and feel, even in the same piece, but when rotating and adjusting the perspective, it makes the visualization and display of 3D images perfect. The visualization of lines from different angles allows art to convey different feelings. In terms of color, the influence of the design is a three-dimensional work with the use of techniques and glossy surfaces, which are characterized by being able to reflect on the surface of the object itself. Interacting with the light of the environment the creator could wish to communicate creates a colorful combination that conveys the peacock's relevance, both the color characteristics of the peacock feathers used and the colors of the peacock. The environment in which the peacocks live creates a balanced blend of colors and reflections. The pattern in the artwork's texture harmoniously matches the resulting shape, as well as the way the light in the three-dimensional work perfectly complements the natural harmony of colors, environments and textures. It helps to bring the work to perfection, which artists derived these colors from mimicking the colors that come from the surroundings and the way of life of the peacocks. This work of art, therefore, brings the shape and composition of beauty derived from the peacock by using techniques and the highlight of the 3D work to be used as a guideline for creating abstract 3D art that may be a guide for interested artists. In creating art in the modern era by using computer techniques to transmit art, which artists can use influence in terms of feelings or perceptions of the environment as inspiration in creating with tools from computers as the primary method. The result that the strengths of the ability to create various arts apply to the production of art while still using information and drawing inspiration from the beauty found in nature like shape, style, and color are combined with the use of visualization and perspective to create a variety of feelings and forms in a single work. It shows that inspiration from nature can change or convey creativity and creativity in many forms, but still maintain the origin and origin of that piece always intervene the forms of conveying work and conveying artistic meaning in various ways may be added all the time according to the eras and eras. But alternative forms of generative art appearing on the horizon aside, it is virtually certain that digital generative art is here to stay. Like art, generative art proceeds by a process of addition, not substitution. It also shows that there will be no development of learning, creativity, advanced technology. However, what human beings continue to create together with lifestyle is to bring inspiration from nature as a force. Inspired to create art that goes hand in hand with the development itself.

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A creation in abstract 3D art inspired from Pavo muticus imperator (Jirawat Sookkaew)