International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 03 March 2023
DOI: 10.47191/ijcsrr/V6-i3-32, Impact Factor: 6.789
IJCSRR @ 2023
www.ijcsrr.org

# Drawing Various Graphics and Shapes and Creating Animated Models of Them in Video form and Securing them Using Artificial Intelligence

**Zarif Zafarovich Kodirov[1], Shokhzod Khayot ogli Khalimov[2], Sunatullo Nasriddin ogli Khojiev[3], Munisa Khamza kizi Islomova[4], Alisher Zafarovich Kodirov[5]**
[1,3] Doctoral student, Tashkent University of Information Technologies.
[2] Master, Tashkent University of Information Technologies.
[4,5] Master, Tashkent University of Information Technologies.

**ANNOTATION:** Algorithms and tools for establishing optimal control in artificial intelligence software and hardware, drawing images, information security, and using fractal technologies are discussed. Bring your ideas to life with AI–generated images. If you're a problem solver with a passion for machine learning and a desire to work on cutting–edge technologies, we want to hear from you. We have a variety of open positions in research, development and other areas. Come be part of our team and help change the way the world thinks about artificial intelligence and imaging. Intelligently designed robots help and work in various areas of human life. What is artificial intelligence. If we talk about artificial intelligence, there are many methods of artificial intelligence around the world. A special national strategy for the development of artificial intelligence has also been developed in Uzbekistan. You must have heard of 10 Mobile AI Art Generator Apps for Android and IOS in 2023. They are powered by artificial intelligence. Whether you are an artist or not, you might be interested in creating art with AI art generator apps. These apps can be used to create digital art, abstract art and even traditional art styles. They use very cool fractal algorithms. Check out the flames below for an example. Lens–AI Art Image Generator, Wonder–An app that creates art from your text, Fotor–AI Art Generator, DeepArt–AI Art Image Generator, StarryAI–Create art with AI, TikTok–Turn your photo into AI art, PicsArt–Text to image AI generator, WOMBO–AI based application that creates amazing pictures, Canva–Art Generator from AI text, FaceApp–AI Face Editor. The development of standards in the field of system communication, artificial intelligence and smart city, the impact of artificial intelligence, and drawing pictures of the development of human civilization by intelligent systems are the specific features of artificial intelligence.

**KEYWORDS:** Motion Graphics, Canva, StarryAI, ML, TikTok, DeepArt, Data, Intel Corporation, NUVIA, Applied Materials AMD, Celera, Infineon, GCT Semiconductor, Global Foundries, artificial intelligence.

## INTRODUCTION

*Mandelbrot map.* This command maps the Mandelbrot complex, one of the most intensively studied in the literature. After the Mandelbrot set representation is drawn, by pressing the Misiurewicz button, the symbolic sequence of the Misiurewicz point can be obtained together with its previous period and period. Fractal plotter provides four different ways to plot the Mandelbrot set:

1. Shades: the image is drawn in color using different colors according to the number of iterations before going to infinity;
2. Black and white: only points belonging to the Mandelbrot set are plotted in black;
3. Milnor: The distance estimation method introduced by Milnor [3] is used. This method plots points that do not belong to the Mandelbrot set, but are very close to it. Filaments appear and many midgets that cannot be seen with the B&W method can now be located using filaments.
4. Escape Lines: The Escape Lines method consists of plotting points that diverge in exactly N iterations. This is an improvement over the B&W and Milnor methods because many more midgets can be observed and their age can be easily estimated with the naked eye.

*Fractal antennas.* Fractal theory has been applied to antennas, but the results are not promising. Many parts of nature are well modeled by fractals, e.g. unfortunately Maxwell's equations are not fractal. To see this, consider frequency–independent antennas such as the planar helix and the log–periodic dipole array. High–frequency active regions are small and located near the feed; the low–frequency active regions are large and farthest from the feed. Thus, feed currents can activate large active regions with only small effects when passing through smaller regions in between. In contrast, the classic Mandelbrot fractal diagram has a single (largest) blob that can contain nutrients, with smaller blobs at the edge of the large blob; each smaller blob is its own cluster of smaller blobs, and so on. This topology is the opposite of the frequency–independent antenna topology. In general, a conventional antenna in the same area (sound) will perform better.

The smallest technologies in the human world that can carry out the most commands can be called small brains. Artificial intelligence (AI) is no longer a thing of the future. That's what's happening right now, and it's changing the motion graphics landscape. With the help of artificial intelligence, motion graphics are becoming more realistic, lifelike and complex. We'll look at how artificial intelligence is being used to create better animations and how it's changing the way we think about motion graphics.

The fields of application of artificial intelligence are very broad, they include both familiar technologies and emerging fields that are far from mass application, in other words, from vacuum cleaners to space stations. According to the criterion of the main points of development, all their varieties can be distinguished. In simple terms, motion graphics are digital animations used to create various graphic designs. This term is commonly used for animations and effects created using computer software such as Adobe After Effects. However, it can also cover traditional hand–drawn animation and stop–motion animation.

Motion graphics can be used for a variety of purposes, from creating simple title sequences for TV shows or movies to complex visual effects and interactive applications. They can be used to create product demos, explainer videos, infographics, corporate presentations, and more.

Motion graphics are often seen as a means of adding visual interest or appeal to content. However, they can also be used to effectively communicate information or ideas. When used well, motion graphics can make complex concepts easier to understand or add emotional impact to a message.

While motion graphics have been around for years, the role of artificial intelligence (AI) in creating these visuals is becoming increasingly important. AI –powered software can automatically create realistic 3D images and videos, saving a lot of time for busy animators and graphic designers. In addition, artificial intelligence can be used to create lively and believable animated characters. This type of technology is still in its infancy, but it has great potential to revolutionize the motion graphics industry.

*How can Artificial Intelligence be used in Motion Graphics?* Artificial intelligence can be used in motion graphics in several ways. One way is to use AI to create motion graphics that are more realistic and lifelike. For example, you can use AI to create animations of people or animals that move and behave realistically. Another way you can use AI in motion graphics is to create graphics that react to user input. For example, you could create a graphic that changes color or shape when the user moves their mouse over it. You could also use AI to generate new motion graphic designs based on input from the user.

*Benefits of using Artificial Intelligence in Motion Graphics*. Artificial intelligence has several benefits when it comes to motion graphics. For one, AI can help to speed up the design process by automating repetitive tasks. This can free designers to focus on more creative aspects of their work. Additionally, AI can help to create more realistic and lifelike animations by learning from real–world motions. Finally, AI can also generate new ideas and concepts for motion graphics, leading to more innovative and original designs.

**MAIN PART**

*The specific methods of physical patterning and implementation using self–organization or hierarchical behavior.* I used drawings in fractal scenes and mainly used fractals used in these labs. And I added additional functions to these fractal functions. My scenario is very different from the labs in this module, because the unusual patterns are generated by fractals. A special algorithm (Fig. 1) (Fig. 2) (Fig. 3) ensures sequential execution. I chose to use the R language, which is connected to the fractal simulator and contains the functions and libraries I need, because this language is more closely integrated with the simulator software. Also, I'm testing some modules in C++, C#, Java, and Python. The work is very interesting and I learned that in the process it is a great tool for us to save the expected financial resources from redundant devices. The drawings in it give a special beauty to the world of graphics.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 03 March 2023
DOI: 10.47191/ijcsrr/V6-i3-32, Impact Factor: 6.789
IJCSRR @ 2023
www.ijcsrr.org

**RESULTS AND DISCUSSIONS**

*Issuing fractal painting commands.* The render is being placed sequentially. Cheaker is an image checking and drawing and error checking tool. The correct commands are being executed in sequence. You can see this in Figure 1. Artificial intelligence in the world of drawing, image and video. At the design level: AI in mobile applications, AI in desktop applications, AI in web applications, improve forecasting, assess the reliability of imaging equipment, automate production scaling up in case of increased demand. At the fractal plot rendering level: automatically select the most useful fractal plot provider, detailed ranking and control of plots and improved drawing optimization process based on safety statistics, automated drawing service and drawing habits and behaviors. At the production level: optimize image prevention service, increase image and video efficiency, reduce losses, ensure security for proper resource mapping.

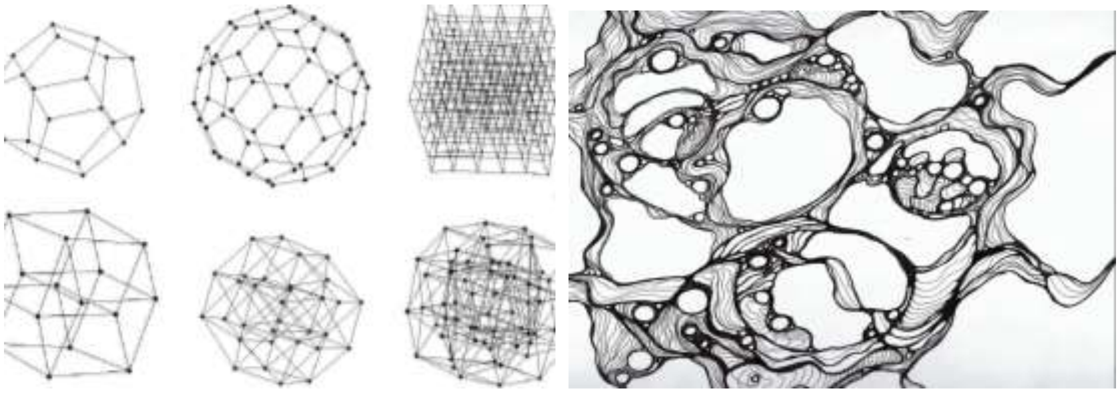


**Figure 1.** Fractal

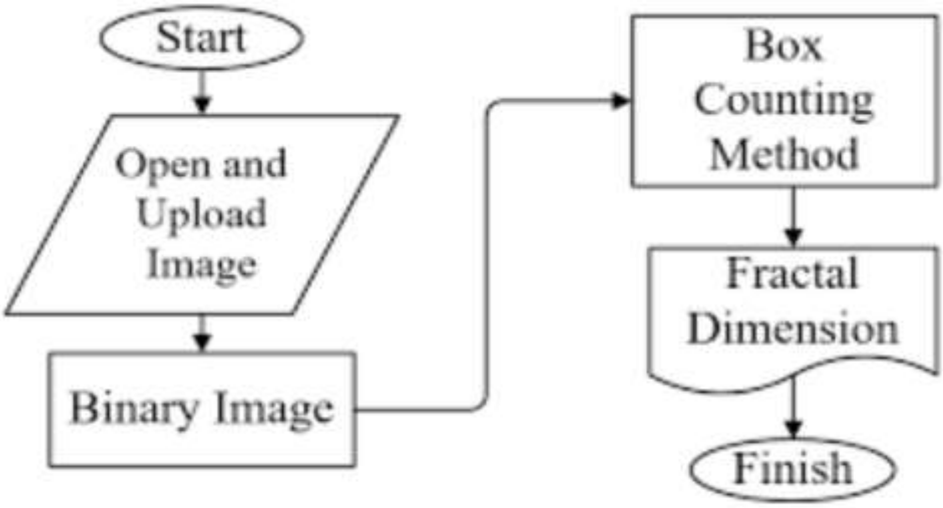



**Figure 2.** Algorithm 1

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 03 March 2023
DOI: 10.47191/ijcsrr/V6-i3-32, Impact Factor: 6.789
IJCSRR @ 2023
www.ijcsrr.org

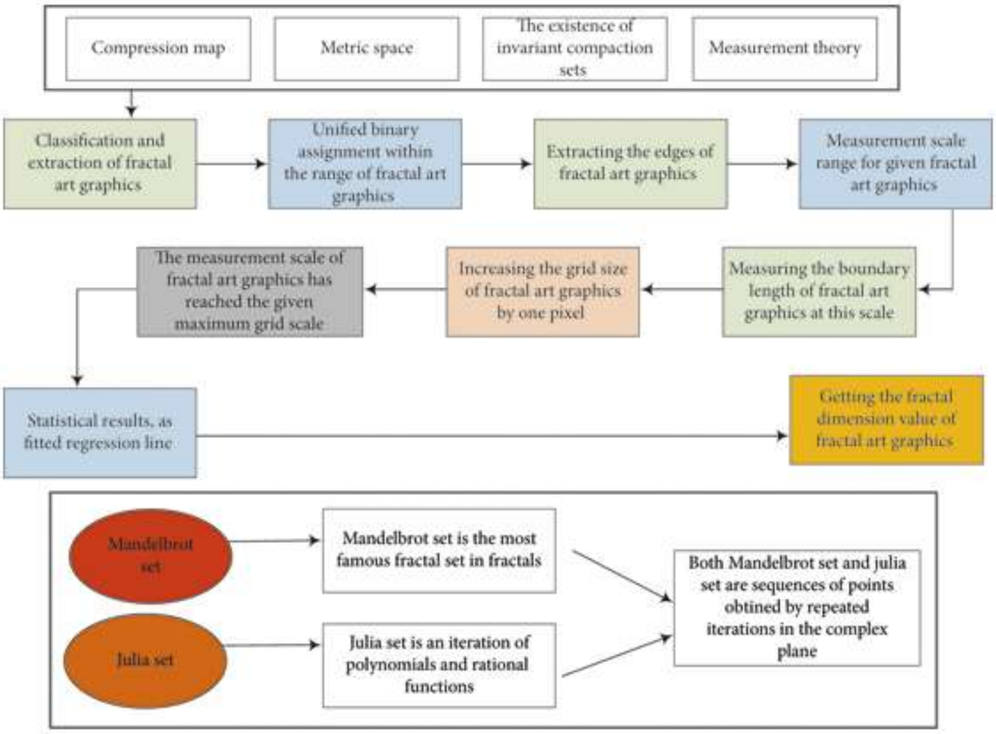



**Figure 3.** Algorithm 2

Figure 1. Here are some fractal diagrams. You can draw millions of fractal diagrams. Figure 2 shows how program code should be run and interpreted, have proper structure, and use descriptive variable names. Figure 3. It strictly adheres to the programming practice and you can check it. Draws an image based on the main element of the main output indicator.

Parameter of Fractak main element function. A basic drawing of a fractal output line. A parameter to pass information from the system to the main function.

In this case, virtual artificial intelligence acts on the basis of a certain function. Commands are given to it through special array elements. The work is carried out on this basis, and the images you expect will appear.

**MATHEMATICS MODEL**

The reason for its success lies in the evaluation function–the algorithm makes the most rational decision at each step. It is most convenient to formally describe it:

f(m) = cost estimate of the least expensive solution path through node m.

f(m) = g(m) + h(m), where g(m) is the cost of reaching the given node, and h(m) is the cost of passing from the given node to the target. To find the least expensive solution, it is best to choose the node with the lowest value of this feature. As it turned out, the search, subject to certain requirements for its heuristics (which we will answer in the next article), can be both complete and optimal, so this strategy justifies itself. Was it interesting for you to write a program for or is the code already too much? For now, let's solve a small problem using it: Step 1:

We start at node A.

From node S you can access node B and node F.

Algorithm S computes f (B) and f (F).

a (B) = 1 + 1 = 2

a (F) = 2 + 3 = 5

since function (F) < function (B), a decision is made to go to node F.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 03 March 2023
DOI: 10.47191/ijcsrr/V6-i3-32, Impact Factor: 6.789
IJCSRR @ 2023
www.ijcsrr.org

Path: S→F
Step 2:
From node F you can access node G and node H.
Algorithm S computes f(G) and f(H).
a (G) = (2+2) + 2 = 6
a (H) = (4+5) + 2 = 11
since function (G) < function (H), a decision is made to go to node G.
Path: S→F→G
Step 3:
You can only access node I from node G.
Algorithm S still computes f(I).
a (I) = (1+1+1) + 1 = 4
A decision was made to move to node I.
Path: S→F→G→I
Step 4:
From node I you can access nodes E, H and J.
Algorithm S calculates f(E), f(H) and f(J).
a (E) = (2+1+2+3) + 2 = 10
a (H) = (2+1+2+3) + 3 = 11
a (J) = (2+1+2+3) + 4 = 12
since the value of function (J) is smaller, it is decided to go to node J.
Path: S → F → G → I → J

$$S_\infty = \frac{a}{1-r} = \frac{\frac{1}{3}}{1-\frac{2}{3}} = 1$$

A story about search algorithms cannot be complete without a genetic algorithm, but it will have to be devoted to a separate article. As part of a university AI course, adversarial search is also explored in the example of minimax search and alpha–beta pruning–more on that another time. And now the tree that was promised to the problem from the beginning of the article.

Note that we have excluded the situation where there is only one person in the boat, because the second person has to push it back. Then only two cannibals can swim together, or one missionary with one cannibal. This is shown in the two possible nodes from above. Another option is when leaving the boat and returning with the same characters, which is not shown in the diagram. However, if you create an algorithm, you will need to take this situation into account. In addition, the problem is solved smoothly, because states that can be crossed according to the conditions of the problem are reached.

**Model 1**

The fractals studied in this paper are one– and two–dimensional self–similar objects that can be constructed recursively, such as the Cantor bars1 and fractals5 depicted in Figure 4.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 03 March 2023
DOI: 10.47191/ijcsrr/V6-i3-32, Impact Factor: 6.789
IJCSRR @ 2023
www.ijcsrr.org

**Figure 4.** Cantorian triadic string and fractal

They are calculated on a microcomputer and drawn on a graphic plotter. Transparencies are then made on high definition film. Due to the width of the lines drawn by our graph plotter, we are limited to fractals from about 7 iterations; then the ratio between the largest L scale of the fractal and the smallest is approximately S/a ~ 1000. This limitation is removed if we are interested in the analysis of transparencies prepared from a real experimental fractal. In this case, an important limitation comes from the limited size of the elementary grain in the film, dimensions; the resulting S/a ratio, that is, the maximum number of scales that can be recorded on film, is about 5,000. In practice, the magnification factor is set so that the image of the object under study corresponds to these limits.

The optical arrangement in which the diffraction experiments are performed is presented in Figure 5:

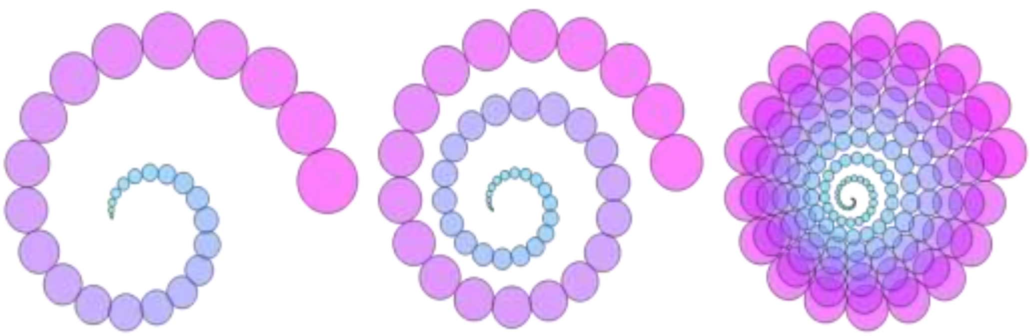


**Figure 5.** Formation of fractal with special algorithms

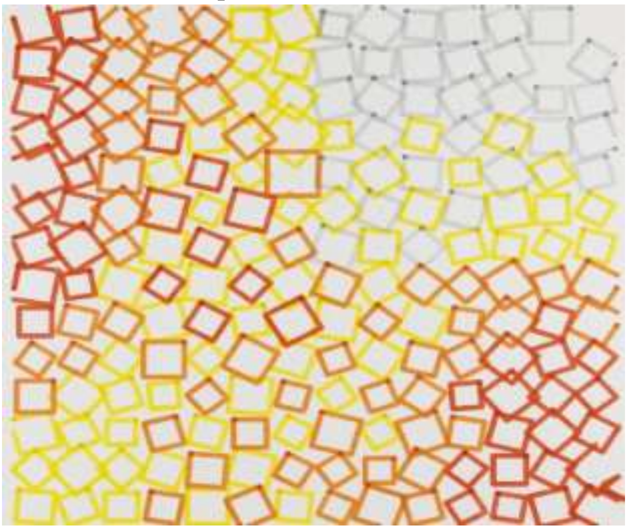
**Graphics fractal models**

*Do you know how to visualize fractal drawings? How to draw artificial intelligence with them?* Machine learning is nothing more than an implementation of artificial intelligence that allows systems to simultaneously learn and improve upon past experiences without explicit programming. It simply means perfection and high development. Artificial intelligence in manufacturing: at the design level: improving the efficiency of new product development, automated evaluation of suppliers and analysis of requirements for parts and spare parts. At the production level: improving the process of performing tasks, automating assembly lines, reducing the number of errors, reducing the time of drawing drawings.

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 03 March 2023
DOI: 10.47191/ijcsrr/V6-i3-32, Impact Factor: 6.789
IJCSRR @ 2023
www.ijcsrr.org


Graphics fractal model 1


Graphics fractal model 2


Graphics fractal model 3

International Journal of Current Science Research and Review
ISSN: 2581-8341
Volume 06 Issue 03 March 2023
DOI: 10.47191/ijcsrr/V6-i3-32, Impact Factor: 6.789
IJCSRR @ 2023
www.ijcsrr.org

It is the process of observing fractal patterns of images based on data, gathering relevant information and making effective decisions for the future of any drawing. Machine learning makes it easy to analyze large amounts of data, usually with fast and accurate results to produce useful patterns and graphs. You can see this in Figure 6.

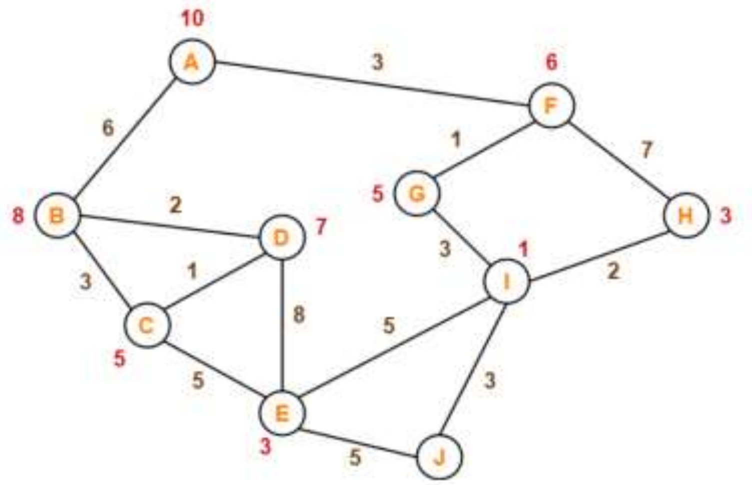



**Figure 6.** Mathematically simple model data verification algorithms

## REFERENCES

1. Sreenivasan K.R., Meneveau C. "The Fractal Facets of Turbulence". Journal of Fluid Mechanics. 173: 357–386.
2. Edgar Gerald (2007). Measure, Topology, and Fractal Geometry. Springer Science & Business Media. – p. 7.
3. Tan Can Ozan, Cohen Michael A., Eckberg Dwain L., Taylor J. Andrew (2009). "Fractal properties of human heart period variability: Physiological and methodological implications". The Journal of Physiology. 587 (15): 3929–3941. 10.1 113/jphysiol.2009.169219. PMC 2746620. PMID 19528254.
4. Taylor R.P., Spehar B., Van Donkelaar P., Hagerhall C. M. (2011). "Perceptual and Physiological Responses to Jackson Pollock's Fractals". Frontiers in Human Neuroscience. 5:1–13. 10.3389/fnhum.2011.00060. PMC 3124832. PMID 21734876.
5. Pickover Clifford A. (2009). The Math Book: From Pythagoras to the 57th Dimension, 250 Milestones in the History of Mathematics. Sterling. – p. 310.
6. Hahn Horst K., Georg Manfred, Peitgen Heinz–Otto (2005). "Fractal aspects of three–dimensional vascular constructive optimization". In Losa, Gabriele A., Nonnenmacher Theo F. (eds.). Fractals in biology and medicine. Springer. – p. 55–66.
7. Duarte German A., Fractal Narrative. About the relationship between geometries and technology and its impact on narrative spaces. Bielefeld: Transcript, 2014.
8. Gouyet Jean–François; Physics and Fractal Structures (Foreword by B. Mandelbrot); Masson, 1996. ISBN 2–225–85130–1, and New York: Springer–Verlag, 1996. ISBN 978–0–387–94153–0. Out–of–print. Available in PDF version at. "Physics and Fractal Structures", October 17, 2010.
9. Falconer Kenneth (2013). Fractals, A Very Short Introduction. Oxford University Press.
10. Sornette, Didier (2004). Critical phenomena in natural sciences: chaos, fractals, selforganization and disorder: concepts and tools. Springer. – p. 128–140. ISBN 978–3–540–40754–6.11.
11. Li, Y., Perlman, E., Wang, M., Yang, Y., Meneveau, C., Burns, R., Chen, S., Szalay, A., Eyink, G. (2008). "A Public Turbulence Database Cluster and Applications to Study Lagrangian Evolution of Velocity Increments in Turbulence". Journal of Turbulence. 9: N31. arXiv:0804.1703. Bibcode:2008JTurb...9...31L. 10.10 80/14685240802376389. S2CID 15768582.

*Cite this Article: Zarif Zafarovich Kodirov, Shokhzod Khayot ogli Khalimov, Sunatullo Nasriddin ogli Khojiev, Munisa Khamza kizi Islomova, Alisher Zafarovich Kodirov (2023). Drawing Various Graphics and Shapes and Creating Animated Models of Them in Video form and Securing them Using Artificial Intelligence. International Journal of Current Science Research and Review, 6(3), 2120-2127*