Fractal Robots: An Intelligent Futuristic Machine

Ketan Jha

Department of Computer Science, Central University of Rajasthan, Ajmer, India

Abstract— Fractal Robots is a developing new administration that guarantees to alter each part of human innovation. This innovation has the potential to enter each field of human work like development, medication, research, and others. Fractal robots can empower structures to be worked inside a day, help perform touchy therapeutic operations and can aid research centre trials. Fractal Robots have worked in self-repair which implies they can proceed without human intercession. In this paper, I have shown a research article about an attractive technology called as fractal robot, this new technology has enough amazing features which can attracts many researchers and scientists for continuing their research work in this area.

Keywords— Fractals, Fractal Robot, Digital Matter Control, Real Life Fractal, Man-made Fractal

I. INTRODUCTION

Fractals Concept

Fractals are probably the most delightful and most peculiar geometric shapes. They appear to be identical at different diverse scales – you can take a little concentrate of the shape and it looks the same as the whole shape. This inquisitive property is called Self-closeness or Self-similarity. To make a fractal, you can begin with a basic example and rehash it at littler scales, over and over, until the end of time. All things considered, obviously, it is difficult to draw fractals with "unendingly little" examples. Be that as it may we can draw shapes which look simply like fractals. Utilizing arithmetic, we can consider the properties a genuine fractal would have – and these are exceptionally astonishing.


(a)
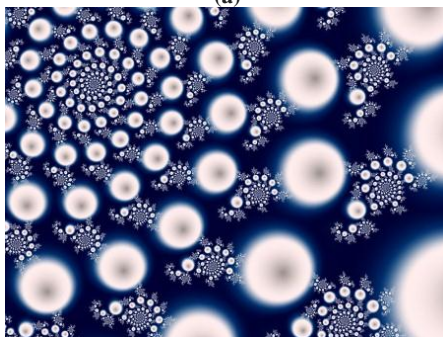
(b)

(c)

(d)

Fig. 1: Real Life Fractals- (a) Broccoli and (c) Lightening, Snow, Romanesco, Leaves and Rivers, Man-made Fractals- (b) Graphical Design 1 and (d) Graphical Design 2.

In Fig. 1, real life fractals are shown in (a) and (c), man-made fractals are shown in (b) and (d). These figures give us an idea to understand regarding diversities in formation of fractals.

Fractal Robot Concept

The introduction of each innovation is the aftereffect of the journey for computerization of some type of human work. This has prompted numerous developments that have made life less demanding for us. Fractal Robot is a science that guarantees to upset innovation in a way that has never been seen.

(a)
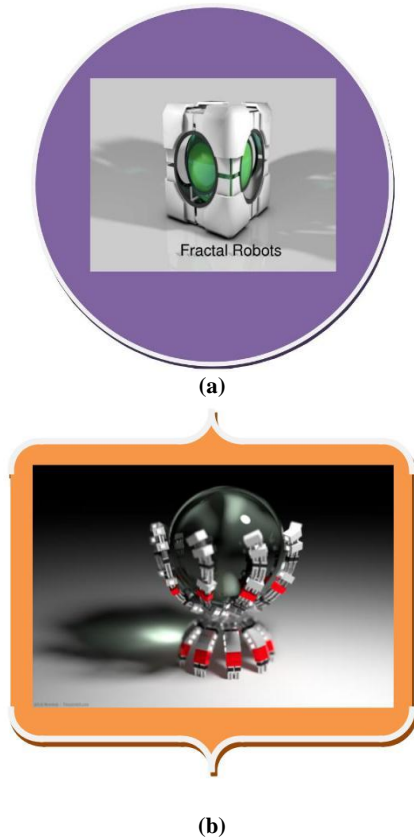
(b)
Fig. 2: Fractal Robots designs- (a) Cube shaped and (b) Imaginary shaped.

In Fig. 2, the designs are shown with respect to Fractal Robots, the formation idea for Cube shaped fractal robot is given by Attar et al. [1], Chaudhari et al. [3] and also by some other researchers or scientists, and the other designs or imaginary shaped for fractal robot is under construction.

In this paper, I have shown a different and productive technology which has ability to make an effective change in the robot technologies. Section II includes the concept regarding mechanism of this technology. This technology has many applications which has been shown in Section III. Section IV concludes the paper.

II.   CONCEPT OF MECHANISM

The guideline behind Fractal Robots is extremely basic. You take some cubic blocks made of metals and plastics, mechanize them, put some gadgets inside them and control them with a PC and you get machines that can change shape starting with one protest then onto the next. Very quickly, you can now assemble a home in a matter of

minutes on the off chance that you had enough blocks and train the blocks to rearrange around and make a house! It is precisely similar to children playing with Lego blocks and making a toy hose or a toy span by snapping together

Lego blocks aside from now we are utilizing PC and all the work is done under aggregate PC control. No manual intercession is required. Fractal Robots are what might as well be called PC programming.

Fractal robots are items produced using cubic blocks that can be controlled by a PC to change shape and reconfigure themselves into objects of various shapes. These cubic mechanized blocks can be customized to move and rearrange themselves to change shape to make objects like a house possibly in almost no time.

This innovation can possibly infiltrate each field of human work like development, medication, examination and others. Fractal robots can empower structures to be worked inside a day, perform touchy restorative operations and can help with research facility tests. This innovation is called Digital Matter Control and is executed here with a machine called mechanical 3D shapes and the whole innovation is called Fractal Robot Technology. Additionally, Fractal Robots have built-in self-repair which implies they can proceed without human intercession.

Impressive exertion has been spent in making the automated 3D square as straightforward as would be prudent after the innovation had been imagined. The configuration is such that it has the least conceivable moving parts with the goal that they can be mass delivered. Materials necessities have

been made as adaptable as could reasonably be expected with the goal that they can be worked from metals and plastics which are efficiently accessible in modern countries additionally from earthenware production and muds which are ecologically friendlier and all the more promptly accessible in creating countries.

This machine requires tooling and programming to perform helpful work. With more propelled adaptations of such machines, it will be conceivable to manufacture a scaffold in a day, a lodging domain in a week, a space ship in hours etc. This innovation is called Digital Matter Control and it is executed here with machines called Fractal Robots. This machine can have extra electromechanical apparatuses fitted such that practically anything can be carried on top of T-shaped transporter braces including glass boards, moved sheet material, tooling merry go round, work parts and pipes. Work parts are sent to the get together point and afterward robot arms or custom devices incorporated with fractal robots perform the last gathering operation. Sheets of moved up sheets of materials can be wrapped around overhang measured structures to make dividers what's more, rooftop. Funnels systems can be laid by the shapes. The T-section can be tooled to convey channels which are then rearranged into the get together point where further robots join the funnel to a connector or to more pipes with 100% mechanization. Joints for funnels and welding devices are conveyed inside shapes as fractal apparatuses.

Such machines will have the capacity to set down channels or disassemble them in complex atomic reactor offices where access is incomprehensibly troublesome. The fractally littler machines venture into alcoves and crevices with littler shapes, instruments and work pieces. Utilizing such fractal machines and tooling, 100% gathering and/or repair frameworks is feasible for complex funnel framework. Utilizes incorporate the oil business, compound industry, atomic, and development. After channels, the following and most troublesome operation is the laying of links, wires and hoses. Fractal robots with a couple of fingers for every size of 3D square can get and explain wires through complex shapes and interface them up with specific ending instruments with 100% robotization. Littler fractal robots and fractal fingers handle littler links until all cabling operations is finished. The fractal finger instrument finishes the rundown of get together machines expected to assemble any man

made machine or structure with 100% mechanization. Everything from building space stations to overseeing atomic mishaps with 100% computerization can be actualized with this innovation. All beforehand recalcitrant mechanical issues in apply autonomy have now been explained with this new branch of apply autonomy.

III. APPLICATIONS

Fractal Robots is a rising new administration that guarantees to change each part of human innovation. Fractal robots can empower structures to work inside a day, perform touchy therapeutic operations and can help with research centre examinations. Likewise, Fractal Robots have built-in self-repair which implies they keep on working without human mediation. Likewise, this innovation cuts down the assembling cost down dramatically. A Fractal Robot looks like itself, i.e. wherever you take a gander at, any piece of its body will be like the entire item. Utilizations of fractal robots are:

1. Span building

2. Putting out fires

3. Resistance Technology

4. Tremor Application

5. Restorative Application

6. Space Application

Parts of our lives, like the field of development, the restorative field, the military field and the exploration field, can utilize Fractal robots successfully. These robots can abbreviate the time expected to manufacture a house, they can be utilized to lead hazardous surgeries, they can test the impact of prescriptions on infectious ailments and they can likewise be utilized to test the new protection innovation. All these capacities should be possible with least human mediation. Likewise, these robots can repair themselves and in this way can proceed with the modified work without ceasing.

IV. CONCLUSIONS

In this paper, I showed the concept, mechanism and its applications of robot technology. After reading this research article, the researcher can easily understand the necessity of the implementation of this technology in our living world. Utilizing Fractal Robots will help as a part of sparing economy; time and so forth and they can be utilized notwithstanding for the most delicate errands. Additionally, the crude materials required are modest, making it moderate for creating countries moreover. This guarantees to change innovation in a way that has never been seen some time recently.

REFERENCES

[1]. Arifmohammad Attar, Loukik Kulkarni, and S. G. Bhatwadekar, "Fractal Robots – Smart Future of Manufacturing Industry," Vol. 2, Issue. 4, pp. 103-105. 2013.

[2]. K. D. Bollacker, S. Lawrence, and C. L. Giles, "Discovering relevant scientific literature on the Web," Intelligent Systems and their Applications, IEEE, Vol. 15, pp. 42-47, 2000.

[3]. R. Chaudhari, and V. H. Bansode, "Fractal Robots and its applications," Int. Conf. on Ideas, Impact and Innovations in Mechanical Engineering, Vol. 5, Issue. 6, pp. 714-717, 2017.

[4]. D. L. Jaggard, "Fractal Electrodynamics: Wave Interactions with Discretely Self-similar Structures," in C. Baum and H. Kritikos Electromagnetic Symmetry, Washington DC, Taylor and Francis Publishers, pp. 231-281, 1995.

[5]. B.B. Mandelbrot, the Fractal Geometry of Nature, 1983.

[6]. Ismail, S. Sulaiman, M. Sabudin, and S. Sulaiman, "A point-based semi-automatic expertise classification (PBaSE) method for knowledge management of an online Special Interest Group," in Proc. of Int. Symposium on Inf. Tech., ITSIM'08, IEEE, 2, pp. 1-7, 2008.

[7]. Prateeksha Tiwari, Ruchika Nagarkar, Surbhi Shrivastava and Shweta Uikey, "New Era Fractals,"IJETMR, Vol. 1, Issue. 1, pp. 261-266, 2013.

Authors Profile

Mr. Ketan Jha was born in 1987 in India. He has completed Master Degree in 2012 from Jiwaji University, Gwalior, India. This university is 52 years old. He is presently a full-time Research Scholar in Department of Computer Science, Central University of Rajasthan, Ajmer, Rajasthan, India.