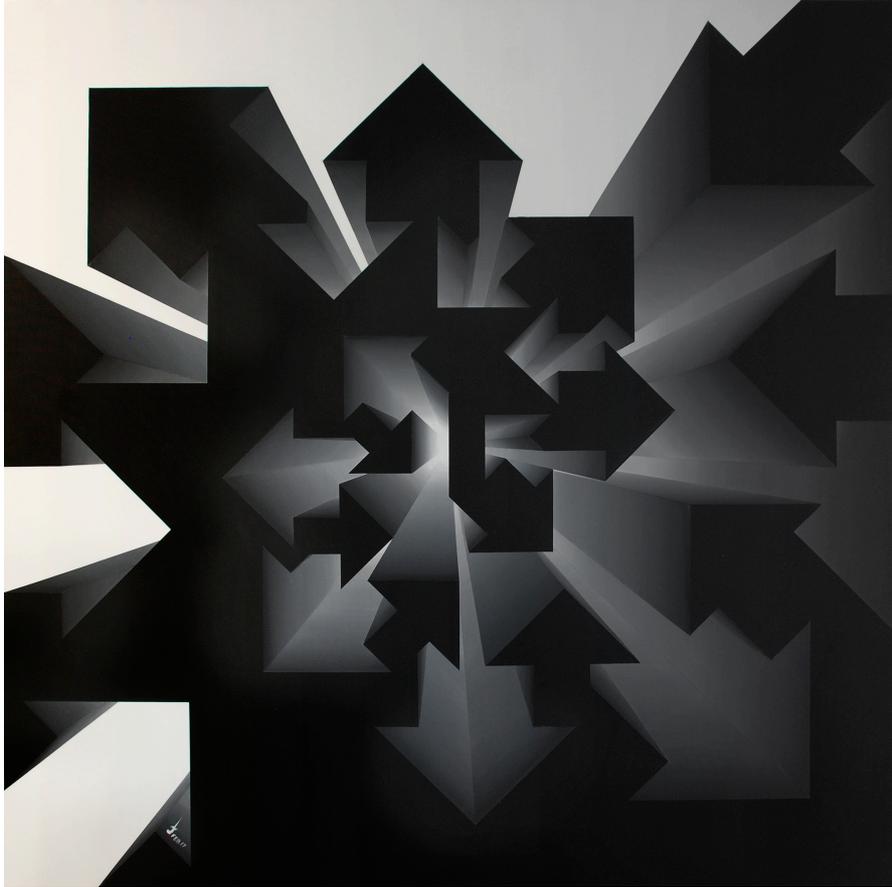


Nautilus - Fibonacci Series Of Paintings and ART



By Lakshmi Mohanbabu



About Lakshmi Mohanbabu

Lakshmi is a Singaporean who grew up in Kabul Afghanistan during the late 70' and 80's. She is a trained architect (B.Arch) and a Fashion designer who graduated from the leading Fashion Design College, The National Institute of Fashion Technology (NIFT) New Delhi. She has over the past two decades taught fashion design, illustration, design history in various fashion institutes such as Lassalle School of the Arts and NIFT. She has illustrated WHO books on disability and done a lot of socially conscious work over the past decades.

Over the years she has studied Art, Architecture, Jewelry and Design all over the world with significant time especially in Europe and the Asia Pacific. This has enabled her to incorporate cross-cultural elements in her designs be it in painting, jewelry or art.

She has a passion for art not restricting herself to painting but in the design of jewelry, Furniture and shoes. She has a plethora of work with over 300 paintings in various mediums such as Pen and Ink, Pencil Color, Charcoal, Acrylic and Watercolors.



Inspiration and Thoughts

The Fibonacci sequence exhibits a certain numerical pattern, which originated as the answer to an exercise in the first ever high school algebra text. This pattern turned out to have an interest and importance far beyond what its creator imagined. It can be used to model or describe an amazing variety of phenomena, in mathematics and science, art and nature. The mathematical ideas the Fibonacci sequence leads to, such as the golden ratio, spirals and self- similar curves, have long been appreciated for their charm and beauty, but no one can really explain why they are echoed so clearly in the world of art and nature.

The story began in Pisa, Italy in the year 1202. Leonardo Pisano Bigollo was a young man in his twenties, a member of an important trading family of Pisa. In his travels throughout the Middle East, he was captivated by the mathematical ideas that had come west from India through the Arabic countries. When he returned to Pisa he published these ideas in a book on mathematics called Liber Abaci, which became a landmark in Europe. Leonardo, who has since come to be known as Fibonacci, became the most celebrated mathematician of the Middle Ages. His book was a discourse on mathematical methods in commerce, but is now remembered mainly for two contributions, one obviously important at the time and one seemingly insignificant.

Fibonacci sequence, which has turned out to be one of the most interesting ever written down. It has been rediscovered in an astonishing variety of forms, in branches of mathematics way beyond simple arithmetic. Its method of development has led to far-reaching applications in mathematics and computer science.

But even more fascinating is the surprising appearance of Fibonacci numbers, and their relative ratios, in arenas far removed from the logical structure of mathematics: in Nature and in Art, in classical theories of beauty and proportion.

The Nautilus is the oldest living fossil having stayed consistent in form without evolving through the Millennia.

Our existence is based on our interdependence and interconnectedness with the world we live in, our immediate surroundings, network of friends and family and ultimately the universe. The Focus of my painting is based on finding the harmony and common features between people of various cultures and races. Our DNA and our galaxy both follow a spiral form like the Nautilus and is the form I have used to suggest this.

In 1875, a mathematician named Wiesner provided a mathematical demonstration that the helical arrangement of leaves on a branch in Fibonacci proportions was an efficient way to gather a maximum amount of sunlight with a few leaves - he claimed, the best way. But recently, a Cornell University botanist named Karl Niklas decided to test this hypothesis in his laboratory; he discovered that almost any reasonable arrangement of leaves has the same sunlight-gathering capability. So we are still in the dark about light. In terms of natural growth patterns, can begin to understand the presence of spirals and the connection between spirals and the Fibonacci sequence.

Spirals arise from a property of growth called self-similarity or scaling, the tendency to grow in size but to maintain the same shape. Not all organisms grow in this self-similar manner. We have seen that adult people, for example, are not just scaled up babies: babies have larger heads, shorter legs, and a longer torso relative to their size. But if we look for example at the shell of the chambered nautilus we see a different growth pattern. As the nautilus outgrows each chamber, it builds new chambers for itself, always the same shape - if you imagine a very long-lived nautilus, its shell would spiral around and around, growing ever larger but always looking exactly the same at every scale.

Here is where Fibonacci comes in, we can build a squarish sort of nautilus by starting with a square of size 1 and successively building on new rooms whose sizes correspond to the Fibonacci sequence.

Running through the centers of the squares in order with a smooth curve we obtain the nautilus spiral = the sunflower spiral. This is a special spiral, a self-similar curve which keeps its shape at all scales (if you imagine it spiraling out forever). It is called equiangular because a radial line from the center makes always the same angle to the curve. This curve was known to Archimedes of ancient Greece, the greatest geometer of ancient times, and maybe of all time.

We should really think of this curve as spiraling inward forever as well as outward. It is hard to draw; you can visualize water swirling around a tiny drainhole, being drawn in closer as it spirals but never falling in. The spiral serves the creative purpose of giving expression and form to something that does not yet exist, something new and unique. The process is that of the ascending spiral, which grows upward while simultaneously returning again and again to the same point, the mandala.

The spiral is a form seen in all aspects of life from the unfurling of a leaf bringing forth new life to the unwinding of a spool of thread like the unraveling of the mysteries of life.

Interpretation

The painting is based on the concept of Fibonacci sequence and the Yin –Yang, The Yin and Yang of Geometry. It is divided by a single continuous line starting and ending at the same point, dividing the canvas in two equal sections representing male and female, creating an illusion of a complex set of patterns, a mandala.

A slice of the spiral of time that may be seen growing and spiralling onto infinity but returning back to the same point where it started.

A single continuous line divides the whole canvas. This creates a shape, which outlines the void that reflects the same shape in rotational geometry creating two spaces- what is there and what is not, the known and the unknown, the yin and the yang

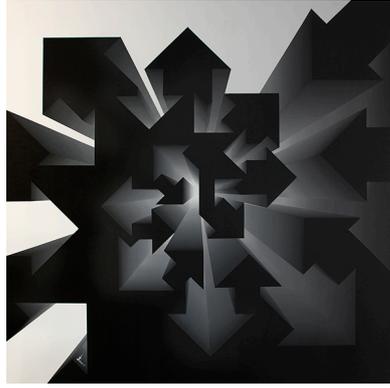
I have translated the double helix in the DNA into a series of arrows representing interconnectedness. The painting consists of just a single shape that may be seen as a double helix. The gradation on the surface from white to gray creates the illusion of an ascending helix. However you may trace four sets of spirals - one set of raised spiraling arrows radiate outwards and one set of raised spiraling arrows radiate inwards. Similarly one set of depressed spiraling arrows radiate outwards and one set of depressed spiraling arrows radiate inwards.

“The interdependence” of a crest and a trough forming a wave is reflected in the two sides of the painting, with one side raised and the other receding. A wave is created only if there is a crest and a corresponding trough, the creation of one being dependent on the other.

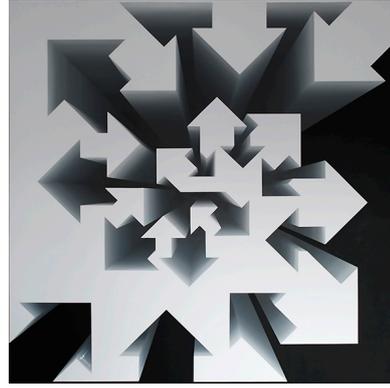
As a representation of racial harmony and interaction I decided to conceptualize my creation around the mandala, the interaction of light and dark or white and black to create an infinite range of grays a pivot of possibilities.

Over the years of my study of global architectural forms and buildings has helped me to simplify this idea of complimentary and interdependent spaces and hence visually the use of a depressed area and a raised area of the Yin-Yang. The raised arrows interact with the depressed space and the depressed arrows interact with the raised space. The Spiral is a Fibonacci sequence.

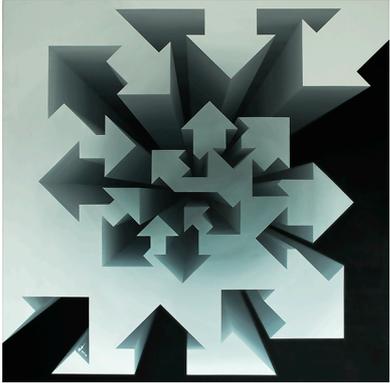
Fibonacci Nautilus- Inverse B&W



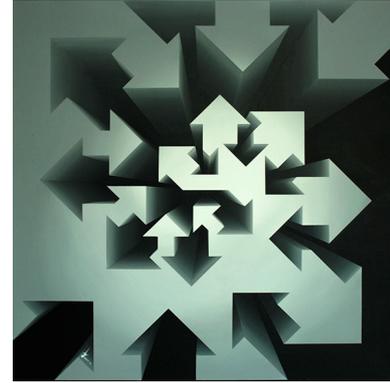
Fibonacci Nautilus- B&W



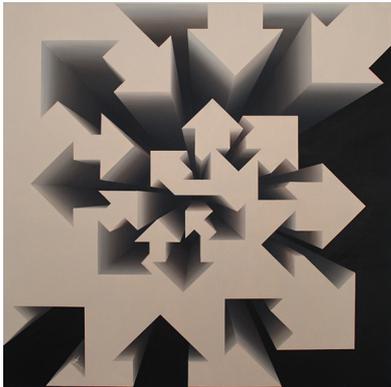
Fibonacci Nautilus- Concave



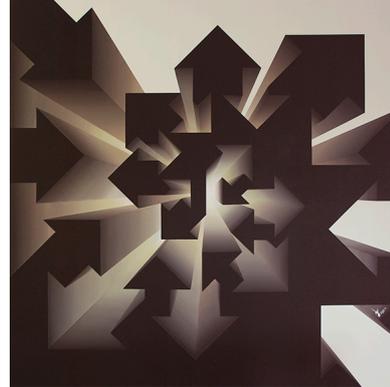
Fibonacci Nautilus- Convex



Fibonacci Nautilus- Beige



Fibonacci Nautilus- Beige Inverse



Fibonacci Nautilus Series is a Set Of 6 Paintings

Size : 140cm X140cm (Canvas Size)

Medium: Acrylic on Canvas

No Prints - No Copies Only Originals

Painting Process

The painting started out with a number of thumbnail drawings to get the right proportions and form keeping in mind that the whole painting is created with a single line dividing the canvas into two equal spaces, the spiral form growing progressively bigger towards the edge. This was then drafted onto the canvas.

The solid space was treated with a gradient from gray to white to the outside to create the illusion of a helix in what would otherwise be a flat spiral. Each receding section about 66 in number was then masked and painted with a gradation from light shades to Dark. This took ten's of layers to get the right gradient. Each section was reanalyzed and reworked on to get the exact level of depth.

Signing into the depth of the painting further enhances the whole perspective.

Website: <http://www.lakshmimohanbabu.com/new-nautilus.html>

Products: <http://www.lakshmimohanbabu.net>