

Exploring the Universe

Our journey begins with the cosmos, an unfathomable expanse of matter, energy, and celestial wonders.



by Haider Shaikh





The Universe: A Cosmic Tapestry

1 Boundless Expansion

Stretching across billions of light-years.

2 Ancient Origins

Estimated age of 13.8 billion years.

3 Unfathomable Scope

Hundreds of billions of galaxies.

4 Cosmic Mysteries

Dark matter and dark energy.

Components of the Cosmos

Ordinary Matter

Stars, planets, and interstellar gas.

Dark Matter

Invisible matter detected gravitationally.

Dark Energy

Mysterious force driving expansion.

Galaxies: Islands of Stars

Spiral

Flat, rotating disks with spiral arms.

Elliptical

Rounded shapes with older stars.

Irregular

Lack a distinct shape.



Exploring Galactic Structure

1

Spiral Galaxies

Disks, bulges, halos.

2

Elliptical Galaxies

Central bulges, older stars.

3

Irregular Galaxies

No defined shape.





The Milky Way: Our Galactic Home



Solar System

Located on the Orion Arm.



Galactic Bulge

High density of stars.



Spiral Arms

Extending from the galactic center.



Galactic Halo

Surrounding the galaxy.

Galactic Clusters and Superclusters

1

Galaxy Clusters

Groups bound by gravity.

2

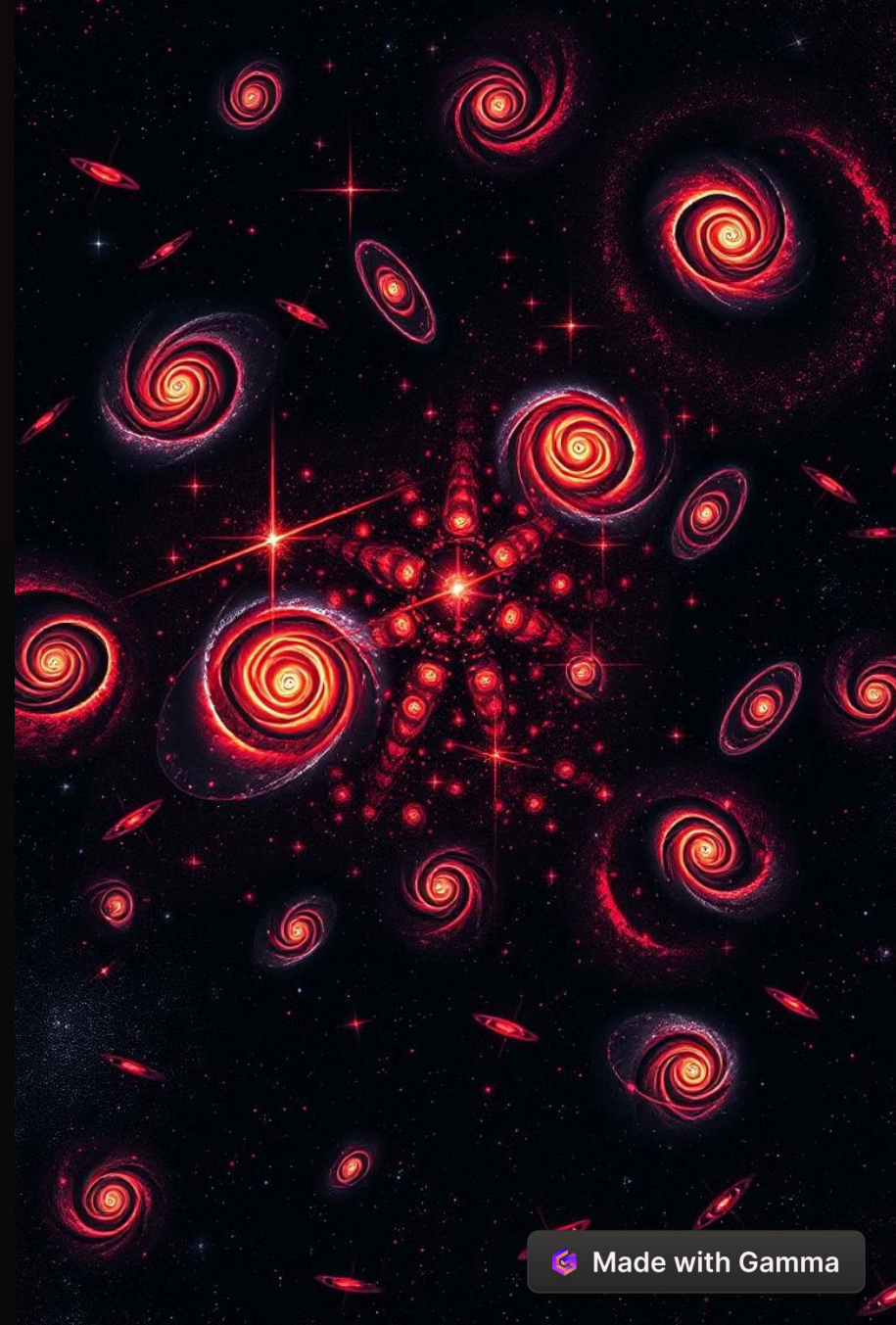
Superclusters

Large-scale structures.

3

Cosmic Web

Connecting galaxies.





Dark Matter and Dark Energy

Dark Matter

Invisible matter.

Detected through gravitational effects.

Dark Energy

Mysterious force.

Accelerates cosmic expansion.



The Expanding Universe

1

Hubble's Law

Galaxies moving away.

2

Cosmological Implications

Big Bang theory.

3

Cosmic Evolution

Universe's age and expansion.



Future Research

Galaxy Formation

Understanding how galaxies evolve.

Dark Matter and Energy

Exploring their influence.

Cosmic Structures

Studying mergers and interactions.