



# Galactic Explorer

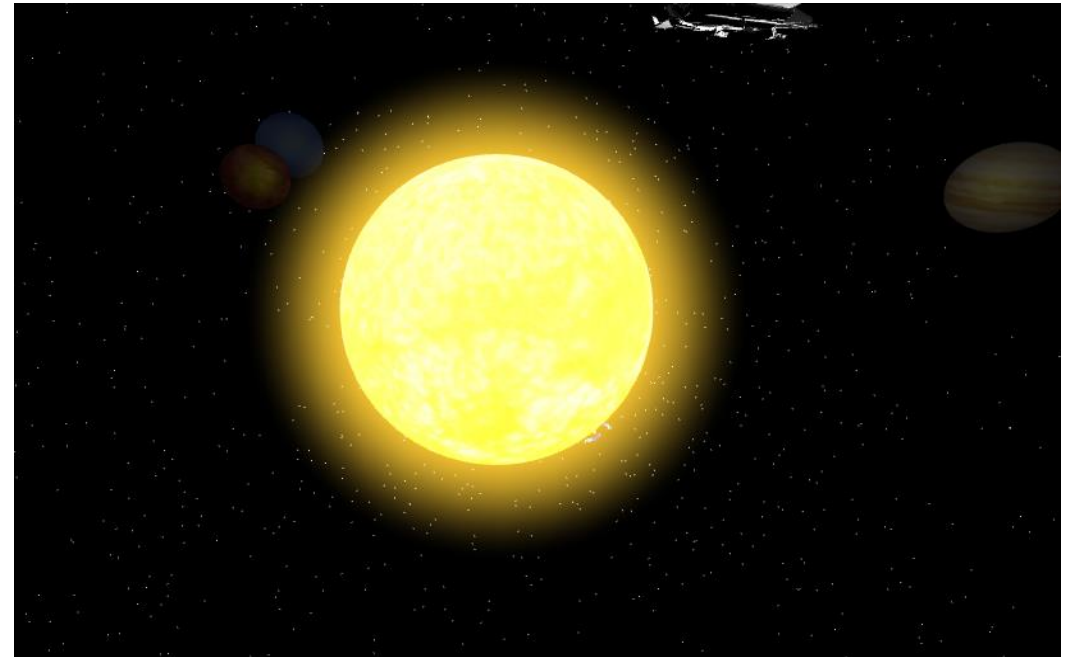
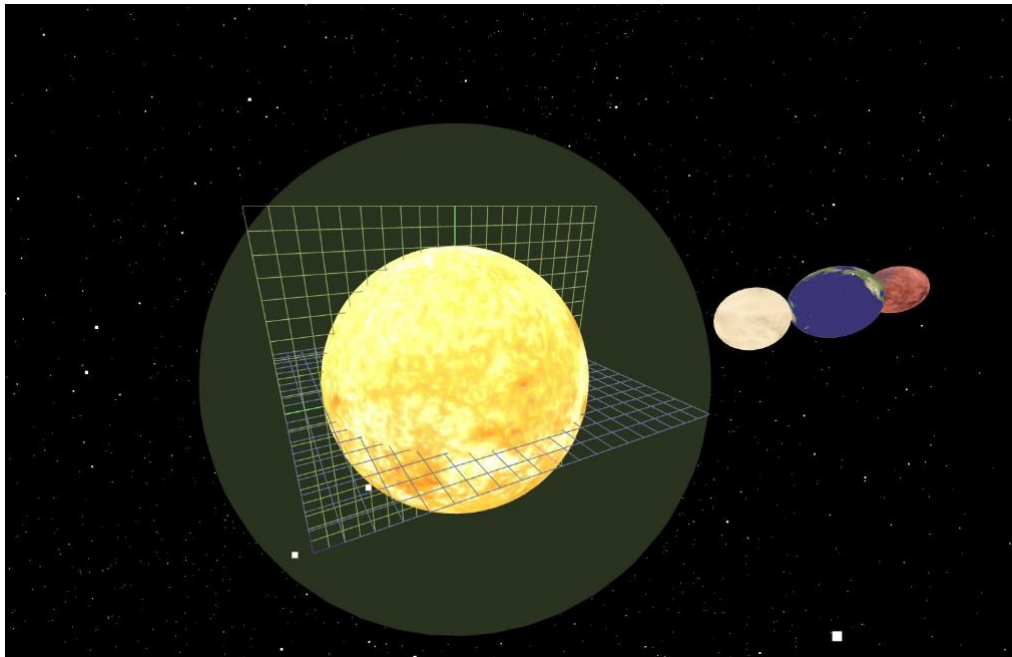
Yalini Nadar

# What is it?

- An immerse THREE.js experience featuring
  - celestial bodies
  - advanced lighting effects
  - spacecraft navigation
  - particle systems



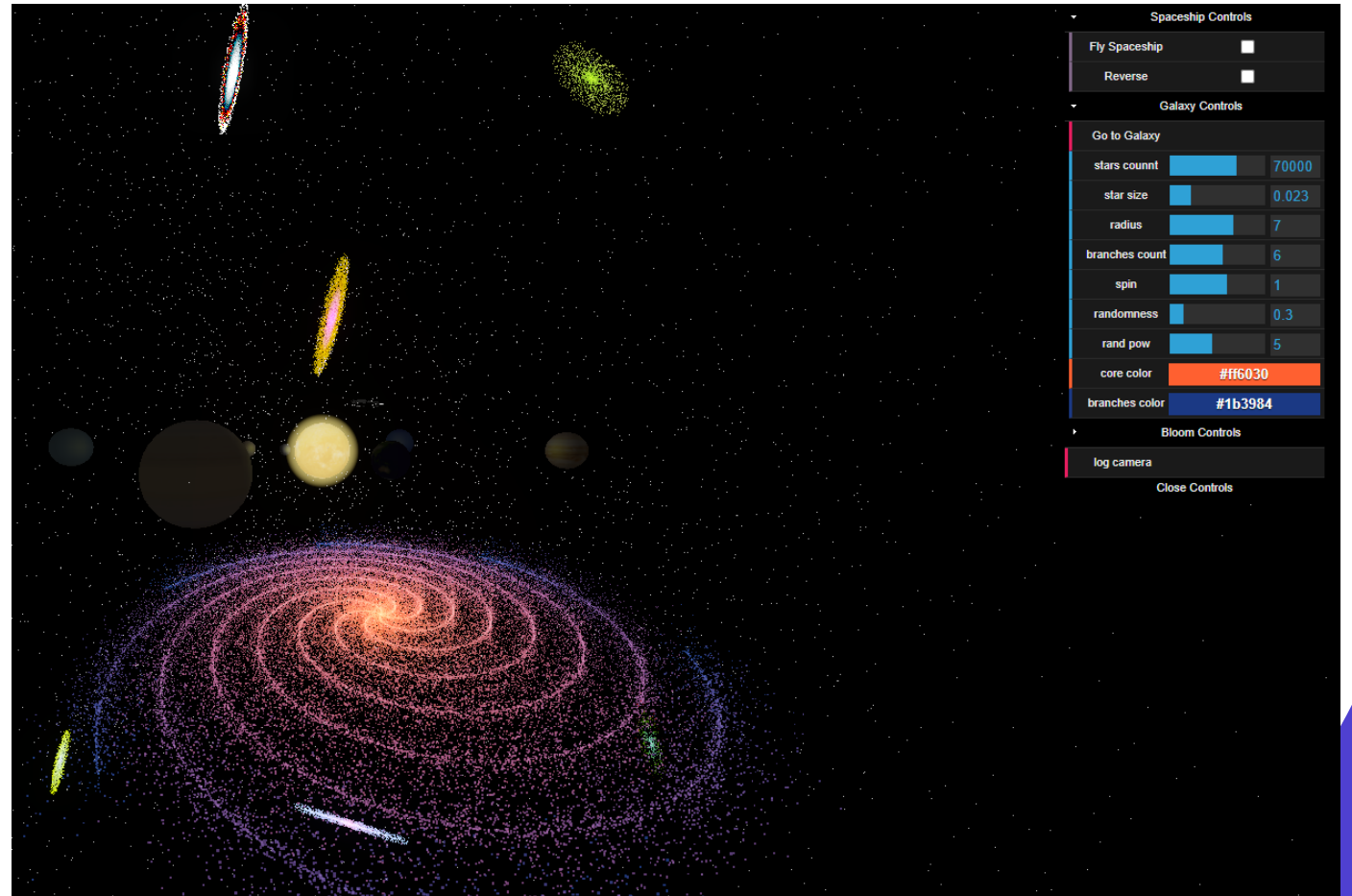
# The Sun





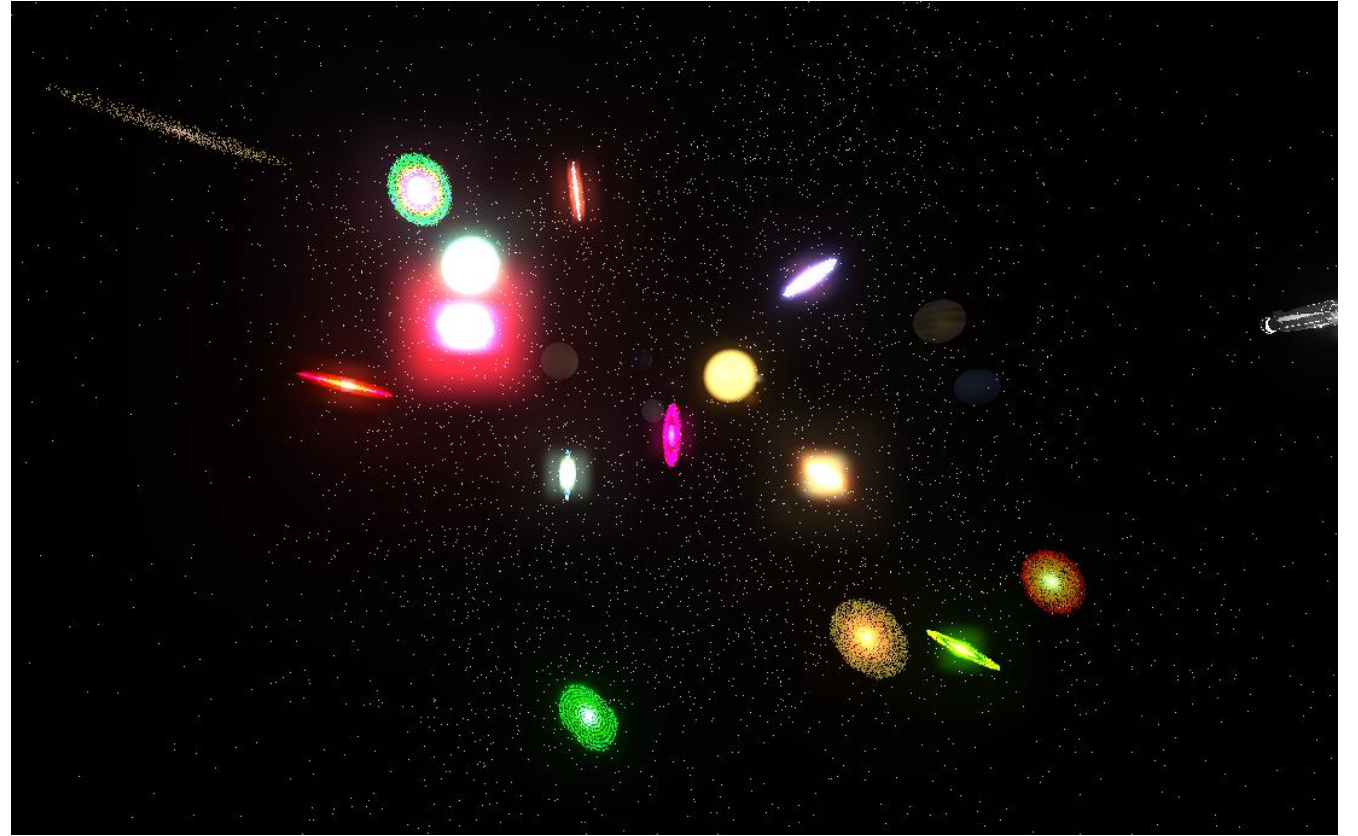
# Dynamic Galaxy

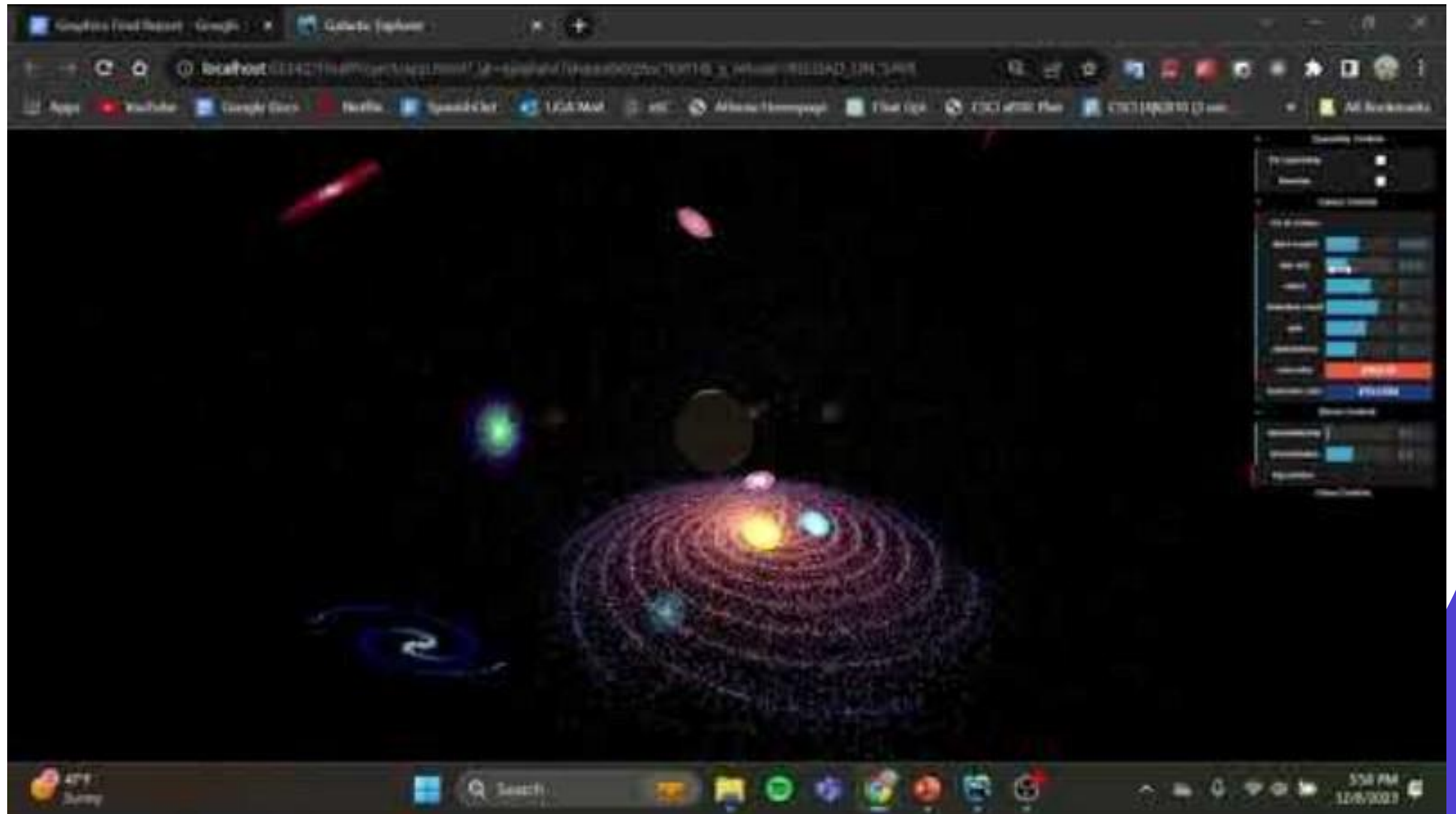
- Buffer Geometry and PointsMaterial
- Customizable parameters
- Colorful Particle Visualization
- Responsive and Realistic Rendering



# Bloom Processing

- 'UnrealBloomPass' post-processing effect
- Creates a glowing effect around the bright areas



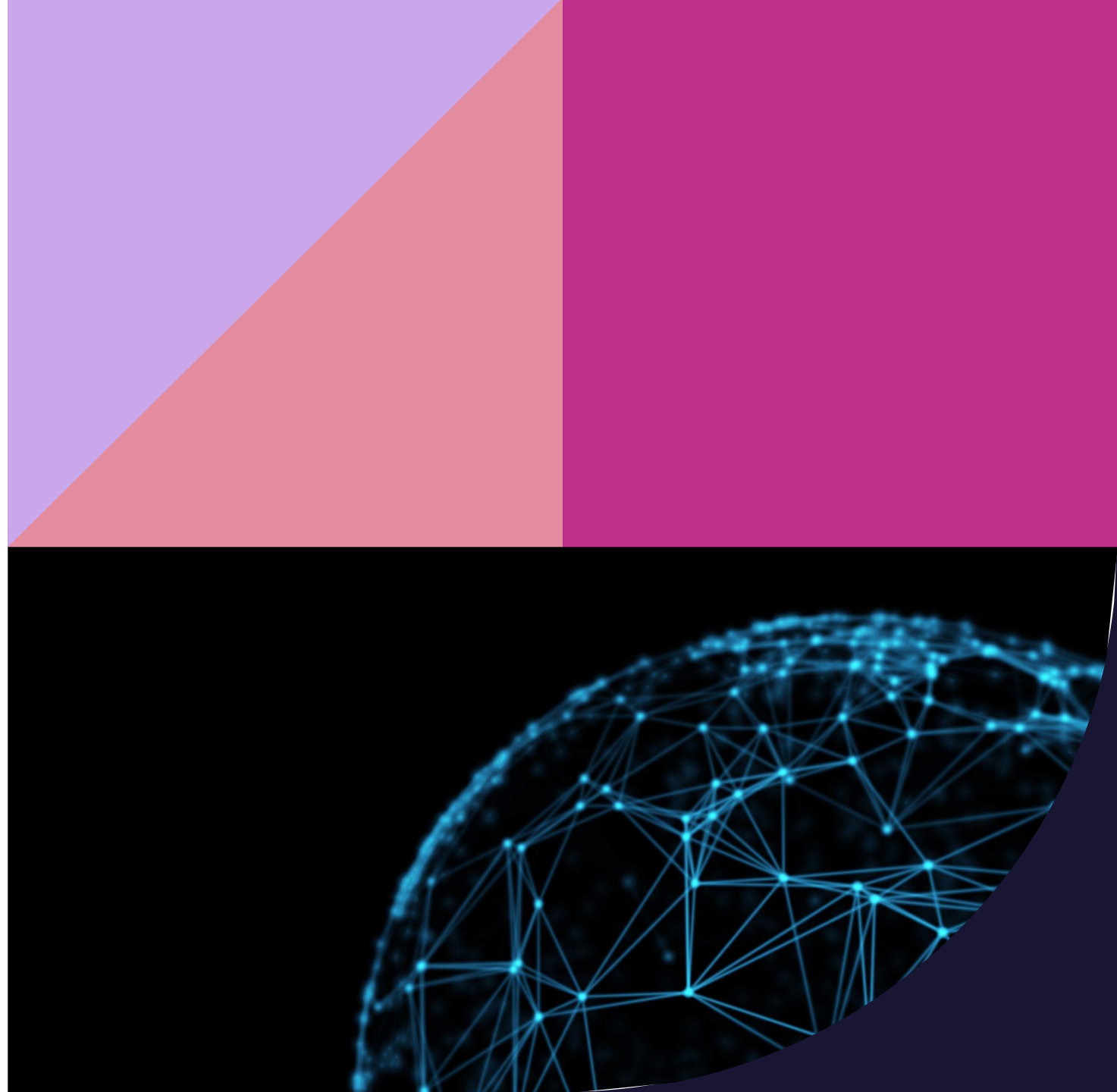


# Justification

- Technical Proficiency and Complexity
  - Integrated 3D models, shaders, and navigation controls
  - Implemented custom shaders
- Immersive Visual Experience and Interaction
  - Lighting techniques to emphasize shadows, reflections, and natural light attenuation
  - User controlled elements for galaxy and random galaxy generation
- Optimization and Polished Demo
  - Visually cohesive GUI
  - Post-processing effects like UnrealBloomPass
  - Significant time investment: 2 weeks working 5 hours per day; 1.75 times project 3

# Future Work

- Sophisticated planetary shaders to achieve realistic surface details, enhancing the visual quality of the celestial bodies
- Integrate of diverse and interactive elements such as planetary rings, asteroid belts, and interactive constellations





**Thank you**

