GROUP PROJECT

AR ANATOMY EXPLORER

TEAM

AKHILESH KOMBE
PRN-202401040244
AR2-16

SHRAVAN SHINDE
PRN-202401040260
AR2-03

MAYUR BHOPLE
PRN-202401040073
AR2-08

WHAT IS AR ANATOMY EXPLORER?

AR Anatomy Explorer is an educational Augmented Reality application designed to revolutionize how students learn human anatomy. By using a smartphone or tablet, users can scan printed image targets (like posters or diagrams), which instantly display interactive 3D models of organs such as the heart and skeleton.

KEY FEATURES

- Interactive Visualization of Organs
- Real-Time 3D Rendering
- Educational Info on Touch
- Mobile-Friendly AR Experience

OBJECTIVE

- Make anatomy learning interactive and immersive
- Help students visualize complex organs
- Overcome limitations of 2D textbook diagrams
- Enhance self-paced learning

TOOLS & TECHNOLOGIES USED

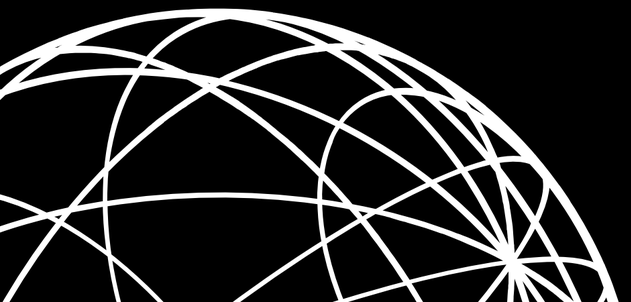
Unity – Used as the main 3D engine for developing the AR app and rendering interactive 3D models.

Vuforia – Enabled image target recognition to display 3D content when specific images are detected.

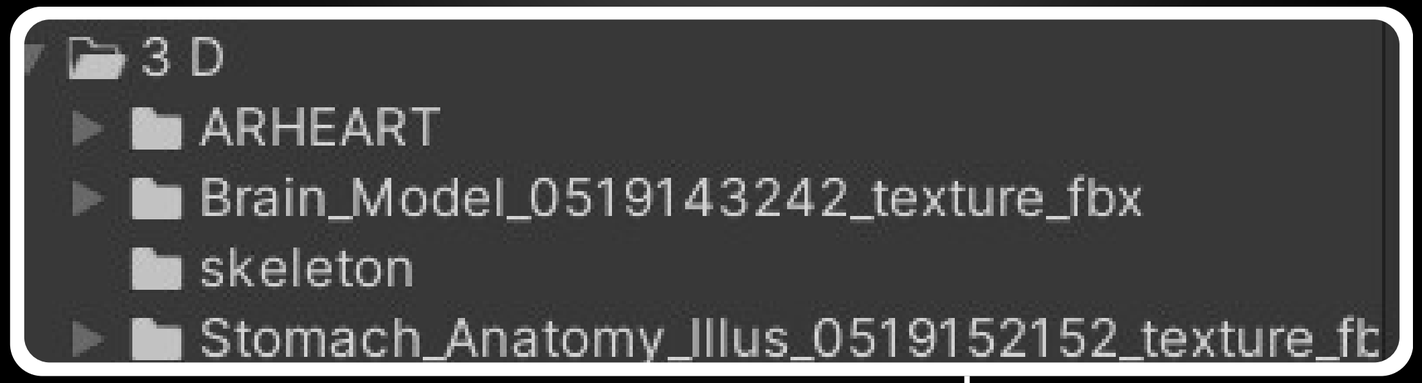
Asset Storage – Used to store and manage 3D models of human organs like the heart and brain.

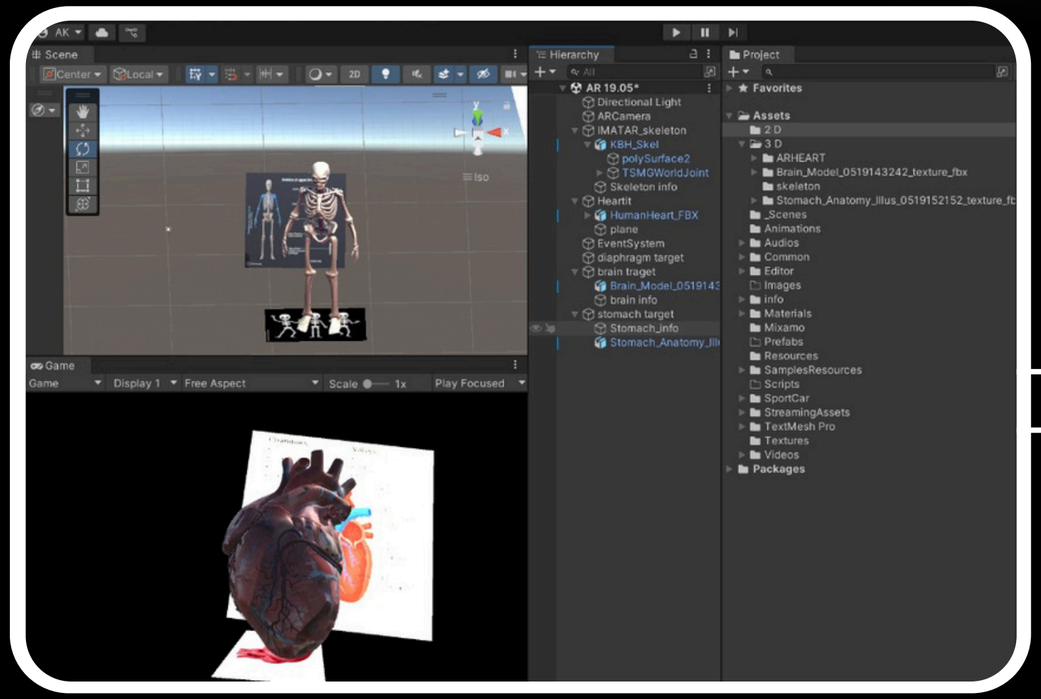
ChatGPT – Helped in generating educational content, planning features, and improving app interactivity.

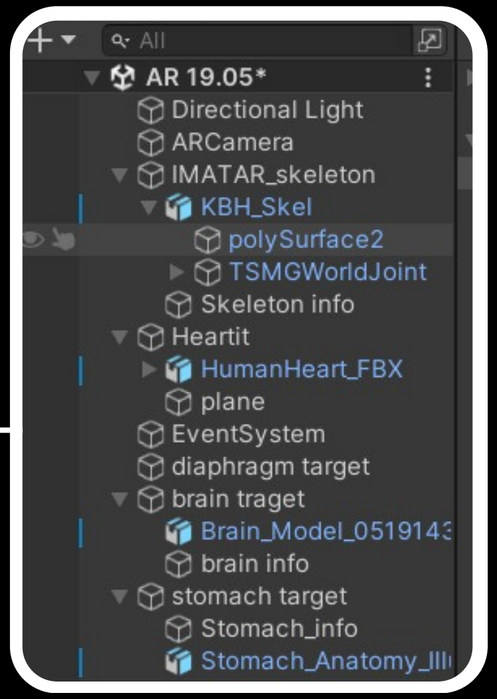
Meshy.ai – An AI-powered tool for generating 3D models from images or text.Used to create realistic 3D models like (Brain,Stomach, etc.) shown in AR.

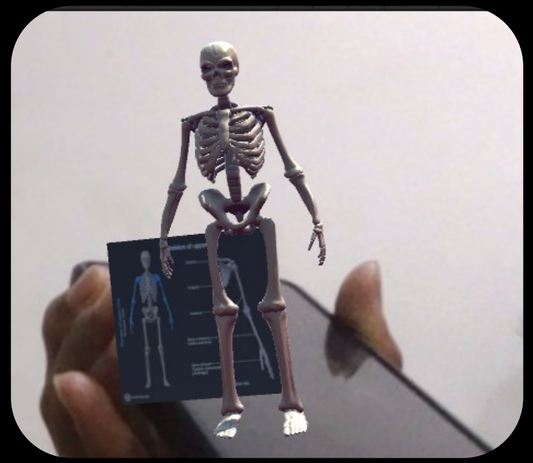


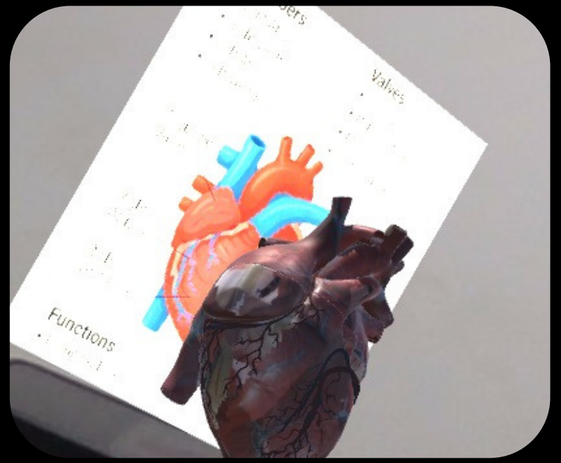
WORKFLOW

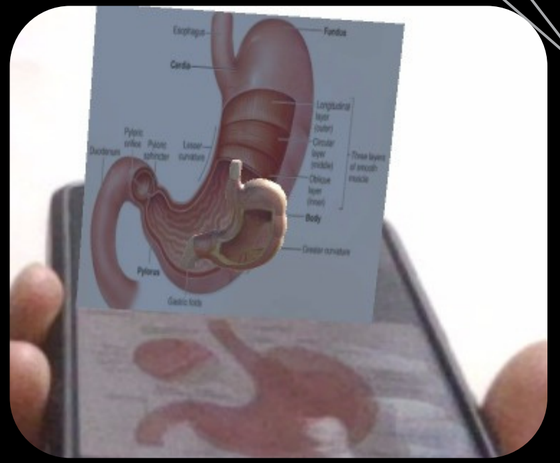

3 D
ARHEART
Brain_Model_0519143242_texture_fbx
skeleton
Stomach_Anatomy_Illus_0519152152_texture_fb

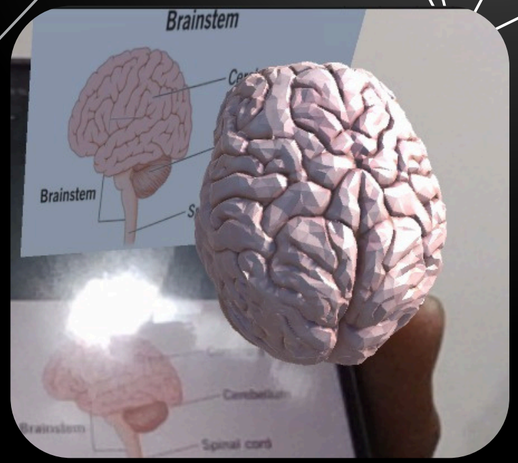

Scene
Hierarchy
Project
Game
AR 19.05*
Directional Light
ARCamera
IMATAR_skeleton
KBH_Skel
polySurface2
TSMGWorldJoint
Skeleton info
Heartit
HumanHeart_FBX
plane
EventSystem
diaphragm target
brain traget
brain info
stomach target
Stomach_info
Favorites
Assets
2 D
3 D
ARHEART
skeleton
_Scenes
Animations
Audios
Common
Editor
Images
info
Materials
Mixamo
Prefabs
Resources
SamplesResources
Scripts
SportCar
StreamingAssets
TextMesh Pro
Textures
Videos
Packages


All
AR 19.05*
Directional Light
ARCamera
IMATAR_skeleton
KBH_Skel
polySurface2
TSMGWorldJoint
Skeleton info
Heartit
HumanHeart_FBX
plane
EventSystem
diaphragm target
brain traget
brain info
stomach target
Stomach_info







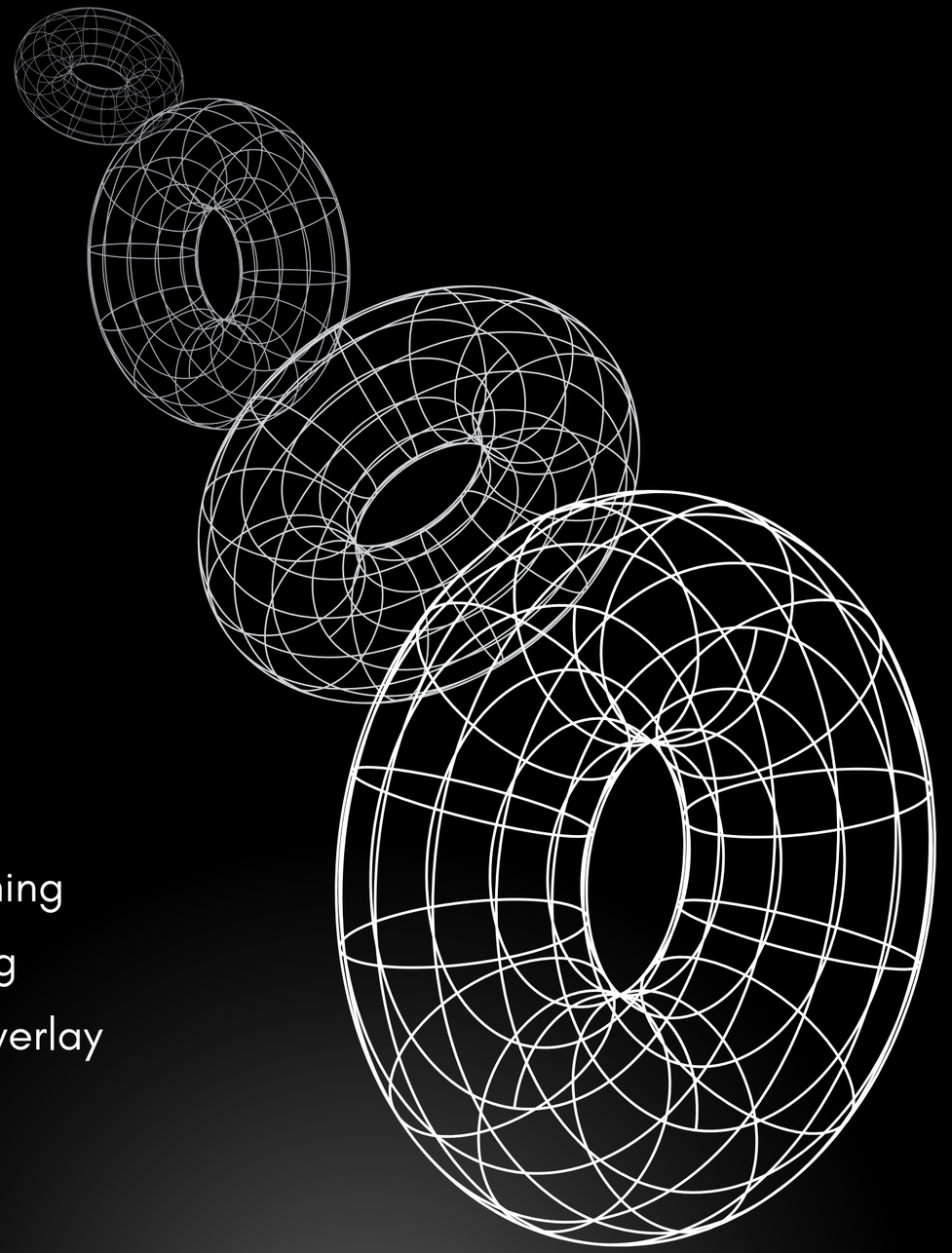


DEMO

THIS SECTION INCLUDES SCREENSHOTS FROM THE LIVE AR ANATOMY EXPLORER , CAPTURED DURING TESTING

FUTURE SCOPE

- Add more organs (lungs, kidney, etc.)
- Integrate with medical databases for real-time updates
- Include pathological conditions for clinical reference
- Add haptic feedback for tactile learning experiences
- Develop personalized learning paths for students
- Support integration with VR headsets for immersive education
- Enable remote collaboration among users for group study or teaching
- Incorporate AI for smart anatomy tutoring and instant doubt solving
- Connect with wearable devices for real-time physiological data overlay



CONCLUSION

The AR Anatomy Explorer project highlights the potential of augmented reality in revolutionizing the way human anatomy is taught and understood. By providing immersive, interactive 3D models, this tool enhances the learning experience, making complex anatomical concepts more accessible and engaging for students and educators alike.

Key Takeaway

Created an interactive AR anatomy learning tool using Unity and Vuforia.

Enabled detailed 3D visualization of human organs for enhanced understanding.

Utilized tools like Blender, Meshy.ai, and ChatGPT for design, modeling, and content generation.

Projet Value

Modernizes anatomy education with immersive technology.

Improves student engagement and concept retention.

Can be scaled for medical training, academic institutions, and self-paced learning.

Demonstrates the integration of AR and AI in creating innovative educational tools.

THANK YOU