Manibalan Balaji

Immersive Tech Creator

LinkedIn | +91-6382034843 | www.bmbverse.com | bmanibalan2000@gmail.com | GitHub

Objective

Passionate XR/MR Developer with hands-on experience in Unity 3D, Oculus SDK, and Blender, crafting immersive experiences for training, simulation, and real-world storytelling. Adept at transforming complex ideas and environments from medical simulations to architectural walkthroughs into interactive 3D experiences. Excited to contribute to cutting-edge industries like smart manufacturing, healthcare, and education by bridging spatial computing and digital design. Driven to push the boundaries of mixed reality and shape how we experience the world.

Skills

- **AR/VR Developement**
  - Unity 3D | Unreal | Oculus SDK | AR Foundation | WebXR | ARKit | ARCore | MRTK | Vuforia | Verge3D | Glitch
- **WebAR & 3D Web Technologies**
  - Glitch(HTML, JS, model-viewer(custom AR viewer)) | Verge3D (Interactive 3D logic & deployment) | Real-time Web Rendering
- **3D Content Creation & Optimization**
  - Blender | 3D Modeling & Animation | Scene Optimization | Texture Baking | Lighting & Shading | Model Compression for WebAR
- **Editing**
  - Davinci Resolve | Canvas | Substance 3D Painter |
- **Additional Skills**
  - Python | SQL | Git | BigQuery | Power BI | Pandas | Hugging Face | AWS Cloud | Google Workspace | Google Analytics |
  - Tamil | English

Projects (Link)

- **Cursor Control Using Eye Movement | Link** — **Python | Pyfirmata | Arduino**
  - Developed a system that allows disabled individuals to control computer cursors using eye movements.
  - Integrated Python, Pyrmata, and Arduino for real-time gaze tracking and cursor control.
  - The system improved accessibility for users with mobility impairments, achieving high accuracy in testing.
- **WebAR Experience for Indian 2 Promotion | Link** — **Glitch | Blender | model-viewer**
  - Designed and developed a WebAR application for **Sony Music India** to promote the launch of the *Indian 2* movie song.
  - Created and optimized a 3D animated model in Blender for real-time AR rendering on mobile devices.
  - Delivered a seamless, app-free AR experience that increased user engagement through interactive visualization.
- **VR Tour App for Oculus | Link** — **Unity 3D | Oculus | VR SDK | Blender**
  - Developed an immersive virtual tour gallery for GT Holidays, showcasing travel destinations in a 3D VR environment tailored for Oculus Quest devices.
  - Integrated Oculus SDK to enable interactive features like teleportation, gaze-based navigation, and controller input for seamless user experiences.
  - Designed 3D environments and assets in Blender, collaborating closely with the GT Holidays team to align visuals with brand aesthetics and tour themes.
- **CPR Simulation in Mixed Reality | Link** — **Unity 3D | Oculus | MRTK | Blender**
  - Designed and developed a complete CPR training simulation for Mixed Reality environments using Unity and MRTK.
  - Created realistic 3D human models and animations in Blender to replicate life-saving CPR procedures.
  - Implemented interactive hand-tracking and gaze-based instructions to guide users through step-by-step resuscitation in a spatial environment.
  - Delivered a fully immersive MR experience that can be used for medical training, demonstrations, and interactive health education.

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- **Interactive VR Room from 2D Blueprint | Link1** **Unity 3D | Oculus | Meta Sdk | Blender**
  - Transformed 2D architectural drawings into a fully interactive 3D training room experience using Blender and Unity.
  - Designed all 3D assets, spatial layouts, lighting, and textures to accurately reflect the planned construction layout.
  - Developed a VR application that allows stakeholders to explore the room virtually, test interactions, and provide feedback before physical construction.
  - Delivered a precise and immersive simulation to improve design validation and client approval workflows.
- **2D Blueprint to Interior 360° Walkthrough | Link1** **Orbix360 | Blender**
  - Converted a 2D house blueprint into a detailed 3D interior model using Blender, accurately representing layout, materials and lighting
  - Designed and textured all interior elements to reflect a realistic, client-approved style and scale.
  - Exported scenes as 360° panoramic views and published them via Orbix360 to create a seamless, interactive virtual walkthrough.
  - Delivered a fully navigable interior experience to help clients visualize space planning and finishes before construction.

Education

- **IIT-M Advanced Programming Professional & Master Data Science** May 2024 - Nov 2024 | Chennai
  IIT-M GUVI
- **Bachelor Of Engineering In Biomedical Engineering** Jun 2018 - May 2022 | Coimbatore
  KPR Institute Of Engineering & Technology

Experience

- **XR Developer |** AllReal Pvt Ltd Jan 2022 - Current | Coimbatore
  - Spearheaded the end-to-end development of AR/VR applications for training, simulation, and architectural visualization projects.
  - Managed multiple responsibilities across 3D modeling, animation, Unity development, video editing and project delivery.
  - Translated 2D client blueprints into fully interactive 3D VR training rooms, enabling stakeholders to preview layouts and interactions pre-construction.
  - Delivered WebAR campaigns for brands using model-viewer and Verge3D, optimizing assets for seamless mobile experiences.
  - Edited and enhanced XR demo videos with DaVinci Resolve, adding VFX, transitions, and overlays for professional client presentations.
  - Acted as a bridge between design, development, and client teams—handling multiple projects with minimal supervision and high quality output.
- **Analyst |** Park Intellie Solutions Pvt Ltd Apr 2023 - Current | Coimbatore
  - Analyzed residential properties using MLS Realist, public records, and market comparables to assist in accurate property valuations.
  - Interpreted zoning details, lot dimensions, and property attributes to support appraisers in drafting precise client reports.
  - Used CAD-based maps to verify lot structures and neighborhood layouts for location validation and analysis.
  - Prepared and reviewed detailed property appraisal reports ensuring compliance with U.S. real estate standards.
  - Collaborated with senior appraisers to meet deadlines and deliver high-quality valuation documentation to clients.

Certificates

- Google Data Analytics Professional Certificate - Coursera
- The Complete Python Course - Udemy
- Introduction To AI - TCSION