One page Abstract for SIGGRAPH

Title: Virtual Songlines - Warrane by Brett Anthony Leavy, Creative Director of Bilbie XR Labs
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Introduction: Virtual Songlines - Warrane, an ambitious project by Bilbie XR Labs, seamlessly blends technology, culture, and history to create an immersive and interactive virtual heritage experience. Sydney Cove, known as Warrane in Indigenous culture, sets the stage for this groundbreaking endeavour, transporting users to a pre-settler Australia to explore Indigenous history and culture.

Creative Approach: Over 18 months, Bilbie XR Labs has migrated a decade's worth of Virtual Heritage projects from Unity to Unreal Engine 5.3.

This transition involves the creation of 40+ landscapes following 11 steps:

- Cutting-Edge Technology: Leveraging Unreal Engine 5.3 and the Meta Quest 3 VR/AR headset, Virtual Songlines - Warrane delivers AAA-quality visuals and believability focusing on Cultural Character Creation.
- Cultural Collaboration: Over 50 First Nations custodians and community leaders endorsed specific projects, fostering true community collaboration.
- Metahuman Skeletons: Creation of Animation Blueprint for Cultural Survival Animations, resulting in around 4,000 animations depicting Indigenous life.
- Smooth Transitions: Achieving smooth transitions between Animation State Machines for interactive NPCs and players.
- Historical Accuracy: Rigorous research ensures an authentic representation of the period, using UE5's Metahuman for realistic historical figures.
- Realistic Characters: Generating realistic male and female Metahumans using old imagery, paintings, and photographs.
- Dynamic Camera Movements: Enhancing the user experience with improved camera views.
- Accurate Foot Placement: Applying hand and foot Inverse Kinematics (IK) for precise terrain-based positioning.
- User Interface: Designing an authentic cultural survival game UI for in-game footage capture.
- Level Swapping: Creating a Temporal-Spatial Time Machine Component for efficient development.
- Terrain Generation: Using Procedural Content Generators based on GeoScience Vegetation Maps.
- Advanced Plugins: Implementing Lumen and Nanite Plugins for improved visuals.
- Website Integration: Linking the Indijiverse Website to the projects using React and Node JS.
- Testing and Debugging: Ensuring Authenticity in Interactive Cultural Storytelling Simulation.

Conclusion: Virtual Songlines - Warrane is more than just a virtual heritage project; it's a bridge between the past and the present, preserving cultural history through immersive media. It invites users to explore, learn, and engage with Indigenous Australia's essence entertainingly and educationally. Join us on this extraordinary journey through time and culture.

Website: virtualsonglines.org