F26.35 Interactive VR Architectural Visualization for Marginalized Communities

Overview

This project focuses on creating an immersive, interactive VR architectural visualization using Unreal Engine. In collaboration with interior design professors from Northern Arizona University (NAU) and the University of Louisville, it explores digital twin solutions for a spatial design project for marginalized communities. The resulting VR environment can be used to conduct research, gather user feedback, and serve as a stand-alone visualization tool for community engagement and design evaluation.

What the student will DO and LEARN

Throughout this internship, the selected undergraduate will learn a broad spectrum of skills in interactive VR development. Guided by faculty experts, the intern will engage in 3D Modeling and Asset Creation using Blender to produce architectural components, interior design elements, and environmental objects. They will then import these assets into Unreal Engine, setting up scenes and functionality via Blueprints (visual scripting).

The VR Implementation stage emphasizes optimizing for virtual reality, including performance considerations, user interface design, and best practices. The intern will also join project meetings with faculty from NAU and the University of Louisville, gaining exposure to research design, interdisciplinary collaboration, and creative problem-solving.

This experience nurtures Technical and Creative Skill Building: the intern will refine problem-solving abilities and artistic sensibilities. The intern develops an understanding of merging form and function in a virtual environment by handling asset creation, scripting, and user interaction. Through regular guidance, the intern will gain confidence in both independent and collaborative work, further emphasizing the immersive nature of the project. Ultimately, this internship provides hands-on involvement in VR while sharpening critical thinking, teamwork, and creative skills crucial for academic or professional success. Overall, it fosters a strong foundation for advanced creative or research endeavors.

Additional benefits

Under regular one-on-one sessions, the faculty mentor will provide personalized guidance to cultivate critical thinking, enhance communication, and deepen the intern's grasp of scholarly research methods. This mentorship empowers the intern to navigate complex academic challenges while advancing professional competencies. The program uniquely integrates interdisciplinary research, blending new media art and interior design insights to illuminate how VR technology can address multifaceted social and spatial issues. This collaborative environment ensures the intern gains a well-rounded perspective and appreciation for cross-disciplinary innovation.

In addition to personal and academic growth, the intern will build a professional portfolio by creating a tangible project that showcases proficiency in industry-standard tools, including Blender, Unreal Engine, and VR development techniques. Such a project will serve as a compelling testament to their skills, positioning them effectively for future employment opportunities or advanced academic pursuits. Furthermore, the intern will access valuable networking opportunities through active participation in collaborative meetings and research presentations. Engaging with professionals and faculty from various disciplines will expand their professional network and provide insights into diverse fields, enriching their overall educational journey and better preparing them for success in a rapidly evolving digital landscape.

Additional qualifications

1) Interest in 3D Modeling and Game Engines: It is highly recommended that you be familiar with or strongly desire to learn Blender and Unreal Engine.

2) Willingness to Collaborate: The intern should be open to receiving feedback from multiple faculty mentors and contributing ideas to improve the VR experience.

3) Motivation and Curiosity: A demonstrated passion for technology, digital art, or problem-solving will help the intern fully embrace the project's creative and research aspects.

Time commitment
6 hrs/week for 30 weeks