Diego Coronado

(346)-363-7089 | diegoa2992@gmail.com | www.sudoneoox.github.io |

EDUCATION

University of Houston   Houston, TX
Bachelor of Science in Computer Science — 4.0 GPA   *2023 - Current*

Lone Star College   Houston, TX
Associates of Arts — 3.9 GPA   *2021 - Current*

EXPERIENCE

Undergraduate Research   Feb 2024 – Present
CAHSI LOCAL REU

- Conducted mentored research as a part of the CAHSI Local REU program, and engaged in training to strengthen my computing, communication, and professional skills. Created a research plan, maintained a journal to report on research progress, and created a research poster to disseminate my research results

PROJECTS

Audio Music Visualizer | *Javascript, THREEJS, React, NodeJS*   May 2021 – May 2022

- Spearheaded the creation of a dynamic audio music visualizer using Three.js, enabling real-time visualization of music tracks.
- Leveraged the power of WebGL through Three.js to ensure smooth animations and visualizations, even for high-intensity tracks, while maintaining optimal performance.
- Implemented algorithms to synchronize visual effects with varying beats, rhythms, and intensities of the music, providing an immersive user experience.
- Designed an intuitive user interface that allowed users to easily upload, play music tracks, and tweak the variables to create different visuals enhancing user engagement and satisfaction.

Galactic Starfield Visualization | *Javascript, THREEJS, React, NodeJS*   May 2021 – May 2022

- Developed a Three.js-based visualization that procedurally generates a galaxy of stars. The number of stars and their branching patterns can be dynamically adjusted, allowing for a diverse range of galactic visualizations.
- Leveraged WebGL shaders through a custom starsMaterial to render the stars, ensuring smooth performance even with a high star count. The shaders also allow for advanced visual effects, such as glowing and twinkling.
- Incorporated a time-based animation system where the elapsed time from the React Three Fiber's clock is passed to the shader material, potentially allowing for dynamic effects like star twinkling or rotation over time.

Three.js Voxel World Experimentation | *Javascript, THREEJS, React, NodeJS*   May 2023 – Current

- Leveraged the voxel-based modeling technique to create a dynamic and interactive 3D world, allowing for detailed terrain variations and structures.
- Embarked on an experimental project to delve into the intricacies of procedural terrain generation using Three.js, aiming to understand the underlying mechanics and potential applications.
- Implemented algorithms to procedurally generate diverse terrains, ensuring each rendition offers a unique landscape, showcasing the vast possibilities of the technique.
- Currently in the process of refining algorithms, enhancing visual aesthetics, and optimizing performance to achieve a more realistic and immersive environment.

TECHNICAL SKILLS

Languages: Java, Python, C/C++, JavaScript, HTML/CSS
Frameworks: React, Node.js, WordPress, THREEJS, PixiJS
Developer Tools: Git, Docker, Google Cloud Platform, VS Code, Visual Studio, PyCharm, IntelliJ, Eclipse