

Submission Details: real_112s1

Form first saved: 2025-03-26 17:04 CDT
Form last updated: 2025-04-06 09:56 CDT

Real-Time Live! Title

Real-Time Live! Title: Bzor Systems Artificial Life Containment Unit

Contributor Information

Contributor 1:

Name: KC Austin

Email: kc@bzor.com

Company/Institution: Bzor Systems Inc.

2nd Company/Institution: MARRY the MOON

Address Line 1: 93 mirehouse run

Address Line 2:

City: Asheville

State/Province: NC

Postal Code: 28803

Country: United States of America

Primary Telephone: 9177490312

Primary Phone Type: Mobile

Personal URL: <https://bzor.com/>

ORCID: 0009-0009-8552-3890

Biography:

KC Austin, creative technologist, is the rare breed who dreams in code and thinks in pixels – a master of the art and science of interactive experiences. He cut his teeth in the early days of Flash, squeezing rich, immersive worlds into a few kilobytes. Since then, he's pushed the boundaries of every medium he's touched: crafting fluid, responsive interfaces; building intelligent tools that turn days of drudgework into minutes of creative flow; coaxing impossible performance out of tiny devices; and bringing natural wonder to life with a few lines of code. He's the secret weapon on creative teams worldwide: the bridge between imagination and implementation, the alchemist who turns constraints into creative gold. Now, as the world goes spatial, KC is poised to redefine reality itself. From groundbreaking VR characters to mixed-reality marvels, he's ready to bring his signature blend of artistry and innovation to the next digital frontier.

Will this person present the submission at the conference? Yes

Is corresponding author? Yes

Categories

Categories: Artist Exploration/Application

Additional Information

Project URL: <https://bzor.com/>

Contact Email: kc@bzor.com

Summary Statement

Summary Statement (Maximum 50 words):

Containment Unit is a spatial computing art experience for Apple Vision Pro. The robotic device hovers in your space, projecting a futuristic sci-fi UI that lets you design and summon procedural creatures—living digital sculptures that pulse, drift, and respond to you and your environment in rich audiovisual harmony.

Technical Overview

Technical Overview (Maximum 300 words):

While the technical implementations taken one by one aren't necessarily groundbreaking, I feel being a solo dev creating every part of the experience myself displays a layer of craft that is hopefully novel and interesting, especially in the challenging Vision Pro environment. I designed/modeled/animated/textured the device in Blender, built/rigged the base creature mesh in Houdini packing various data into vertex colors, created sound effects in Ableton Live, assembled everything in Unity, created a custom "holographic" UI in C# using Freya Holmer's Shapes library with 3D eyetracked hover states for the buttons/sliders, a parametric genetic code dataVis, a customizable cosine gradient driven color palette, a state machine system for the creature behavior, boid-like steering, and custom animated vertex shaders to create a diverse range of generative looks. Since there is no GPU instancing in Polyspatial and I couldn't use Shapes directly, I rendered the UI to a rendertexture with Metal to display on a RealityKit quad. For the creature physics I started writing a verlet solver but ended up saving time by using the library Obi, which is highly optimized and runs Burst on the CPU. This enables user/hand interactions letting you pet and move the creatures in realistic ways. The room mesh is loaded with ARKit, the creature raycasts out to avoid walls and stay within the user's space. I'm constantly crafting new subtle creature behaviors to increase the sense of life and connection. The creatures are driven by a hierarchical state machine that switches between exploring, getting curious about you and their siblings, dancing together and getting hungry. Bringing together this range of design/aesthetic work, technical workarounds and old school graphics solutions hopefully adds up to a magical experience that is more than the sum of its parts.

Presentation

Presentation (Maximum 300 words):

This 6-minute presentation showcases Containment Unit, a spatial art experience for Apple Vision Pro. The first five minutes are a live, interactive demo; the final minute features a behind-the-scenes development process from inside the Vision Pro.

Minute 0–1: Introduction + Context I introduce myself and frame Containment Unit as an artwork/framework exploring procedural creatures, interface design, and embodied interaction. The device appears and opens, projecting a sci-fi interface into our space.

Minute 1–2: Creature Creation, Editing I demonstrate editing creature data—modifying color, material properties, and shape. A live DNA visualization updates in real time, showing the procedural system's internal logic. I explain how the interface is intentionally futuristic and vague, allowing the user to explore various settings to discover different resulting creatures.

Minute 2–3: Launch + Motion After saving and selecting two creatures, I launch them from the machine. The device animates as if "printing" them, and they begin flying around the room. I explain how this system combines a skeletal rig with procedural

motion and real-time mesh/color animation through vertex shaders.

Minute 3–4: Spatial Interaction I interact with the creatures—petting, observing their curiosity, and generating a food pellet with cupped hands. These interactions are driven by gesture recognition, spatial sensing, and behavior state machines, all real time and procedural.

Minute 4–5: Recall + Loop Completion I tap the machine to recall the creatures, who return and dock. The UI reappears, completing the full interaction loop. I summarize the architecture tying the entire system together and share the roadmap for future creature designs.

Minute 5–6: Behind-the-Scenes Segment I then transition to my workflow: modeling the device in Blender, procedural modeling/rigging the creatures in Houdini, audio in Ableton Live, building shaders in Unity, all inside Vision Pro. This segment reveals how the piece was both created for and within spatial computing.

Additional Information

Company Dependency: No

Platform and Hardware for Demonstration:

I'd love to demo the app live at the conference. This would require a video receiver capable of Airplay to stream from the Vision Pro to the screens.

Licensed Components/Middleware: Unity 6 Pro with Polyspatial, Shapes, Obi (Unity packages)

Milliseconds Cost:

I'm averaging around 7-11ms per frame which is under my 90fps frame time allotment, but I do have GC spikes from the UI camera I'm trying to fix. As this is a Unity/Polyspatial app it's a little hard to profile exactly what the perf cost is for each technique.

Pre-calculated/pre-cached Elements:

None, the end showing my development process and workflow in Blender, Houdini, Photoshop, Ableton Live, and Unity seamlessly building/running the application will be live on my macbook/Vision Pro. If this is not possible then I can create a short 1min video to play at the end.

Live Feed: Only one, no audience participation.

Presentation Technology Requirement: No

Presentation Technology Requirement Explanation:

I only have one Vision Pro, I wouldn't be able to bring additional devices for cost reasons. I can try to borrow another one but it may be difficult.

Internet Access Needs: No

Bringing Access Point/Switch/Router: No

Wireless Needed: No

Representative Image

Representative Image:

Video

How do you want to provide your video? Upload

Upload your video (recommended format: MP4; other acceptable formats: MOV, AVI), up to 200MB.:

Copyright Text, Image Credits, and Comments:

Acknowledgement

Acknowledgement: yes

SIGGRAPH Contributor Advertising and Promotion Policies

I agree to the SIGGRAPH contributor advertising and promotion policies. Yes