

Heritage Trees

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Figure 1: Point cloud and 3D print of the Big Cypress, Cat Island, Louisiana

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1 DESCRIPTION OF ARTWORK

Heritage Trees preserves digital traces of ancient trees with entangled cultural and ecological histories through laser scanning, 3D printing, and immersive soundscapes (Figure 1). Some trees are exceptional for their age – such as the 1,500 years old Big Cypress on Cat Island, Louisiana. Such specimens are important repositories for the diversity of life, archives of genomic biodiversity and ecological memory. These large, old trees are arks of biodiversity that serve as habitat for multitudes of species, vaults for vast quantities of carbon, and network armatures for fungal symbionts. Others are important for their history, such as the 19th century Dueling Oaks

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Figure 2: System diagram with 3D printed specimen, tactile transducer, and microcontroller

in New Orleans where duelists would meet to settle scores between a pair of southern live oaks. These trees serve as toponyms and anchors for intergenerational memory. To preserve a record of these irreplaceable cultural icons and ecological keystones, we laser scanned some of the most significant heritage trees in Louisiana and recorded their soundscapes. To share their stories, we 3D printed each specimen using selective laser sintering [Harmon and Nam 2024] and embedded tactile transducers in the prints, transforming the trees into speakers (Figure 2). The vibration of the trees immerse their audience in their soundscapes, in sonic tapestries of cicada calls, birdsong, rustling leaves, and wind. We also used the soundscapes to animate the point clouds, mapping audio signals as vectors of motion, so that the leaves of the trees dance to the call of birds and insects. This artwork explores how machine vision sees and unsees cultural landscapes – rendering material traces immaterial – and experiments with rematerializing these immaterial virtual artifacts through digital fabrication. It investigates the authoritative, yet imperfect nature of data captured through the lens of machine vision, asking how algorithms mediate meaning.

2 PROJECT URL

<https://xyz.cct.lsu.edu>

3 ARTIST INFORMATION

Hye Yeon Nam is a digital media artist and HCI designer exploring how technology can improve our interactions with other agents – humans, robots, or nature. She foregrounds the complexity of social relationships by making the familiar strange and interpreting everyday behaviors in performative ways. She is currently an associate professor of digital design at New Jersey Institute of Technology.

Brendan Harmon is a spatial scientist and computational designer whose works explore the entanglement of ecology and technology. His current research programs include documentary projects that use emerging technologies to preserve a record of our disappearing natural and cultural heritage. He is currently an associate professor of landscape architecture at Louisiana State University.

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Brendan Harmon and Hye Yeon Nam. 2024. 3D Printing Heritage Trees. *Journal of Digital Landscape Architecture* 9 (2024), 605–613. <https://doi.org/10.14627/537752055>