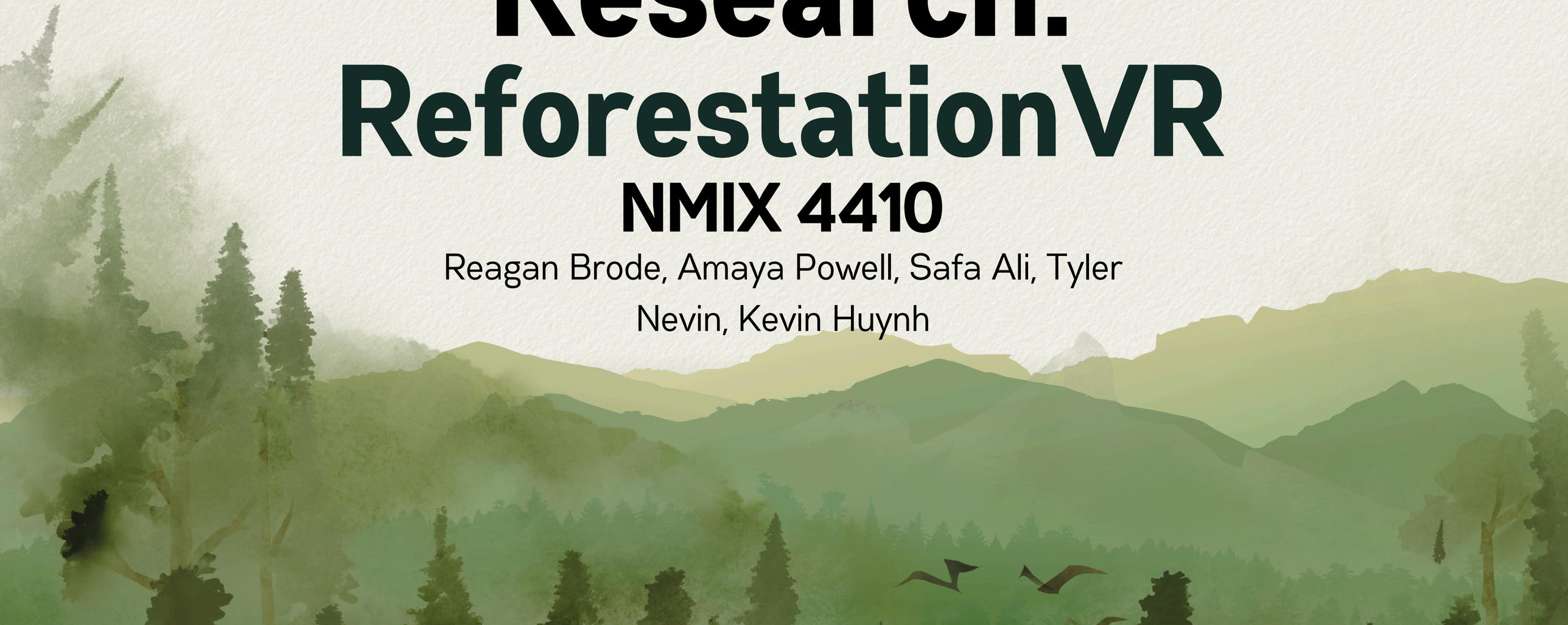
Exploratory Research: ReforestationVR

NMIX 4410

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What is ReforestationVR?

- A project set out by the Archway Partnership, a unit of UGA's Public Service and Outreach, which seeks to collaborate with various campus departments and partners to create a web resource aimed at educating and supporting those in the Southeastern United States who were affected by Hurricane Helene.

What is our project?

- Our group will be working with Archway Partnership in developing a mobile-friendly AR feature extension to an existing website. This tool will enable property owners to receive recommendations on what kinds of trees to plant where in their yards and to visualize what those trees would look like on their property.

Our Client

Sharon Liggett



Sharon serves as one of the Operations Coordinators at the UGA Public Service and Outreach, Archway Partnership. She now coordinates community-university initiatives, programs, and projects, and oversees a diverse outreach and engagement portfolio in education, housing, health, arts and science, law, social work, and family and consumer sciences. Her department aims to address issues in the community by bringing together local leaders to identify projects that could benefit the community and then working as a connection point between the communities and faculty/students to work on selected projects.

What is AR (Augmented Reality)?

- An extended reality technology that enables the blending of the digital and physical world, essentially overlaying digital information onto our physical world. One of the primary use cases for AR is creating immersive digital experiences for education, where users can view and interact with the environment and objects in a hands-on way that is not normally possible.
- The technology is typically used by smartphones and other mobile devices, generally being the most accessible method.

Applications for Mobile Devices

- Applications range from measuring the dimensions of a real-world object to simulating how an appliance would fit in your real-world environment for home decoration.



Inspirations

Green Schoolyards

A free augmented reality visualization app designed to help users view how virtual models of trees and outdoor seating would look in their schoolyard. The app allows users to create a virtual design and then walk through and around the live model. Screenshots can be taken to capture key views to share with others. Similarly, we aim to have our users be able to walk around and view the trees while being properly anchored to the environment.



Inspirations

WWF Forests

An IOS AR app that aims to “bring nature directly into people’s homes.” The app features interactivity, where the user can select flora and fauna of the forest and view information about their selection. Users can see animals react to their presence, adding to the immersion. While the purpose of our project is more a tool for visualization than an interactive experience, we would like to add elements that display information about the current tree type being viewed, similar to how it is executed in this app.



Possible Tools

Blender - We plan to use this program to work with the 3D models of trees, cleaning up the meshes and preparing the tree scans for our AR web app if necessary.

Model Viewer - A web component developed by Google that allows for 3D interactive models to be embedded into a website.

- Supports web-based AR overlaying
- Supports model-switching

Three.js - A cross-browser JavaScript library that simplifies working with animated 3D graphics directly in web browsers using WebGL.

8th Wall - An online development platform for building AR experiences directly from the browser. It is a browser-based IDE that uses a cloud editor for developing and hosting projects.

- Has various templates to start with.
- Has a free plan that includes a watermarked logo on the actual product.
- Likely to be **discontinued** around 2027.

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