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Reforesting_now

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Funding: CNPq, UAM, UNIFESSPA, UnB

Potential competing interests: No potential competing interests to declare.

Abstract

Keeping what remains standing is not enough, almost all the green is gone, now it's time to reforest our land Brazil. Reforestation in our country is urgent. In this vein, we present the artistic proposal that has been going through Brazil, which shows in large dimensions photographs of the devastation in the Amazon and in Augmented Reality, the imagined reforestation. How can art and design be a means of raising awareness for environmental activism in the Amazon? How memory technologies help environmental activism? The proposal aims to collaborate with the planting and reforestation of the Amazon.

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Keywords: Reforestation, Augmented Reality, Artificial Intelligence, Environmental Aesthetical Research, Computational Artwork.

Introduction

The Brazilian experience in forest preservation oscillates between governments directives. There isn't a well disseminated preservation culture within the population. In Pará (one of the amazonic states) the fire starting practice by the common people is very common, and often they do it close to their house walls showing that the consequences of the fire spread are not known.

If anyone observes the Brazilian forest preservation area maps, one will realize that they are very distant from the social-economic activities area and by that we are saying that it is very difficult to realize what is the importance of these areas if they are just photographs and news leads for the general public.

The visual arts and especially the interactive visual arts have an important role and opportunities to bring the experience of the environmental preservation concerns to the public that lives in big cities and capitals.

Augmented Reality technology although isn't relatively new, still has applications that we don't have sufficient research and data. And the sensorial immersion that the AR guides the interator, may be important for the empathic link between the general public and the forest preservation culture.

This paper pretends so, to describe the actual point of the REFLORESTAMENTO_JÁ artwork aesthetic research and the next steps we are meant to do in this process.

The matter of reforestation and it's urgency

Forest's conservation is an important matter not only in Brazil but all over the world. Nevertheless, the Amazonian Forest is a symbol of all Earth's biodiversity, and a big part of this forest is in the Brazilian area.

The city of Marabá, in the Brazilian state Pará, is a medium one with an area of 15 thousand kilometers square, and had an incredible deforestation process since the 1970's when the city was dismembered in other small cities in the Carajá area that has 373.373 kilometers square [1].

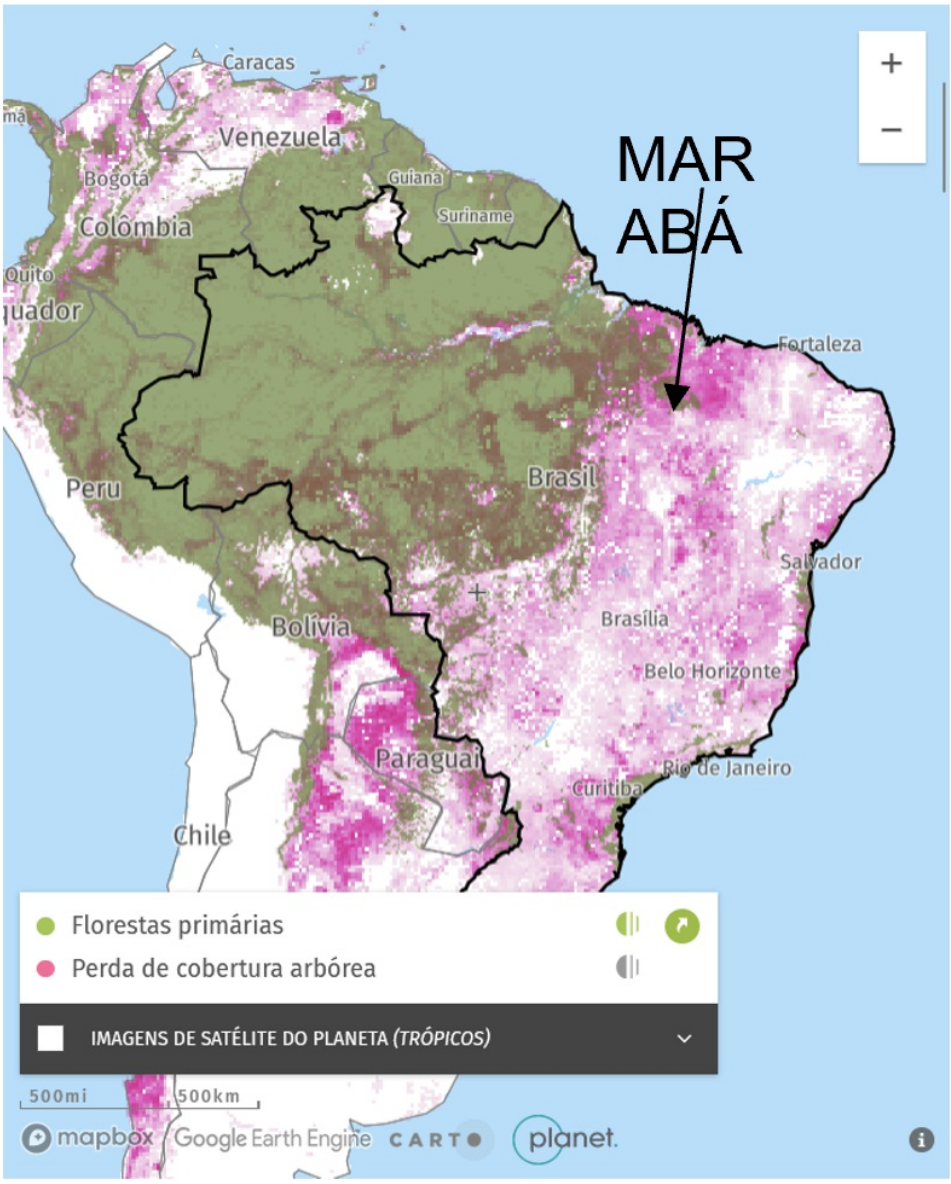

Figure 1. Map of the degradation of the forest area since its primary state.

Source: Global Forest Watch (globalforestwatch.org).

The Figure 1 points in green the dimension of the Amazonical Forest and the pink areas are the lost tree cover area. The green one is on an up layer, and we can see the massive dark pink area below it, and as one can see, Marabá is in one of these dark pink areas.

Figure 2. View of the landing area of Castanhal do Cinzento, Itacaiúnas River at the rear of the photo (August 1967). Source: Public Marabá Historical Archive.

Figure 3. The Castanhal do Cinzento seen from above. Source: Google Maps (Out 2022).

A simple comparative between Figures 2 and 3 shows the loss of the green area cover. The region represented in Figures are distant from the metropolitan area, but we can say that all this area was fully covered and now we can seen big slices in the forest (like the pale green and yellow area shown in Figure 3.

The Artwork and the Aesthetical Research

As mentioned before, the artwork named REFLORESTAMENTO_JÁ (REFORESTING_NOW), is an interactive object seen with Augmented Reality technology.

The idea of the artwork was to show to the public how much vegetation was ripped off and how much effort will be taken to bring one of the several areas back to normality.

So, we got a two part job: first choose a place and take a photo so we can get the image mark for the AR. Second we must model and render trees and other plants from the local environment.

Historical and environmental Research

We visited the Marabá Public Historical Archive to find some reference material, as an historical record of the well known places of “Castanheira do Pará tree farms”. Marabá was once known as the biggest producer of Brazilian Nuts (Castanha do Pará) that grew from colossal trees known as “Castanheiras” (*Bertholletia excelsa)*.

Castanheiras usually are the trees that we see from above the other tree tops (get as high as 30 to 50 meters) and their bodies (as seen in the Figure 4) could get to 1 or 2 meters in diameter. But there is a record of Brazilian nut trees that got to 50 meters high and 5 meters in diameter [2].

Figure 4. The Pará’s Castanheira body.

Source: Marabá Public Historical Archive (Jun 1968).

After that to do the image marker we choose to take a shot from one of several degraded areas around the city, and we imagine reforesting it with layers of digital tree in 3D models. The area was chosen by proximity for the urban area and the aesthetic intentions of the artists.

Figure 5. The image mark that we use to place the virtual tree models.
Source: Authors Archive (Set 2022).

The most difficult part was to find the reference to the 3D model materials. We already had an experience designing a Brazilian nut tree at a big scale, and the problem that we faced was the enormous amount of polygons used to make a full scale tree. So, to fix this situation at this time, we decided to use cover material, so all we needed was photos from Brazilian nut tree leaves.

This turned out to be very difficult to find any photo in digital archives and we ended up using a drawing of the leaves that we found in the public archive.

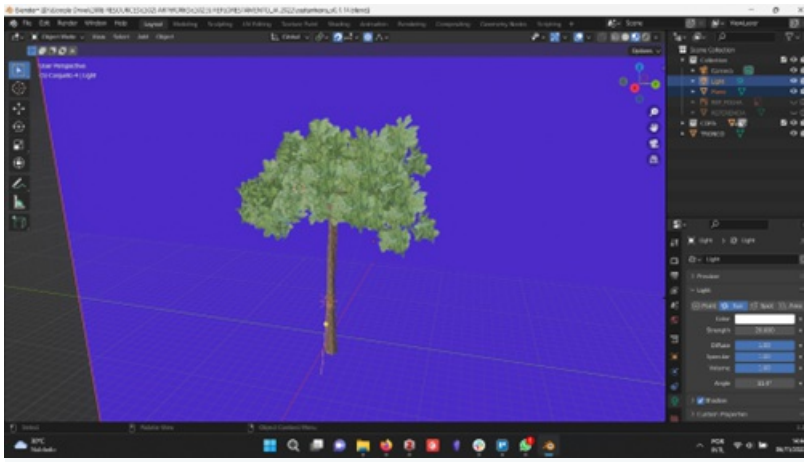

Figure 6. Brazilian nut tree 3D Model. *Source: Authors Archive (Set 2022).*

We used the Blender software for the modeling and one reference image of a real Brazilian nut tree from the Marabá Public Historical Archive to model up on it.

After rendering it in a MPG file, we imported it to the ARTVIVE portal and put the movie as a layer, linking the background image (Figure 5) and the tree (Figure 6).

First version exhibition and new version planning

This artwork's first version was exhibited in the #21.Art (21th International Eletronic Art week) in Brasília, Brazil. The background image was 6 meters large with 1,70 meters high and was placed in one of the main entrances. The public was instructed by a tag with a QRCode to download the ARTVIVE app and point the camera to the wall.

Figure 6. Exported image from the ARTIVIVE app with the Brazilian nut tree.
Source: Authors Archive (Set 2022).

As we had a short deadline and with the difficulties to find more references it was possible to show only one layer. But for the future, we want to do more models, create more layers, and we want to track the new planted trees and let the public see, through the 3D models of each one, the adult version of each plant and tree.

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