Virtual Dreaming: Simulating Everyday Life of the Darug People

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Fig. 1. Virtual Dreaming: Simulation Environment

In the virtual dreaming simulation [2] we show everyday life of Aboriginal people from the Darug tribe, who used to live in the Parramatta basin (New South Wales, Aus-

tralia) in year 1770 A.D. before the arrival of the first fleet [3] and the establishment of the first European settlement in Australia. Each member of the tribe is represented by a virtual agent (see [1] for more details). This simulation uses the aboriginal environment built for the Generations of Knowledge project [5].

The simulation takes the participant on a quest to explore the life of an indigenous clan. A spiritual mentor and the guardian in the form of an aboriginal elder gradually introduces the participant to the daily life of the clan members, the knowledge they possessed, rituals they performed, protocols they kept, etc. The elder familiarises the player with various clan members (virtual agents) as they perform their every day activities such as tool making, painting or preparing food. During these interactions the participant also learns some aspects of the aboriginal customs, medicine and ceremonies, such as the smoking ceremony, and receives an introduction to their spiritual values.

Figure 1 depicts the simulation environment and shows a small settlement with typical aboriginal homes and people preparing food, walking around, making tools and socialising. Figure 2 shows some selected agents and scenes from the simulation: an aboriginal family resting on the bank of the Parramatta river, a group of females collecting berries and another small settlement where people are making tools, some are having a feast and a group of males prepares for the smoke ceremony.

Fig. 2. Agents performing their daily activities

In its present form the simulation is not fully interactive. Instead of being able to walk around the virtual environment, use objects and converse with virtual agents participants automatically move along the scripted path, listens to explanations of the experience and observe the surroundings through an Oculus Rift[4] headset.

It is important to note that virtual agents in this simulation do not only control the behaviour of human avatars, but also animals (birds, fishes, kangaroos, etc.). All "leaving beings" in our simulation are supplied with individual decision making capabilities and some degree of intelligence.

The simulated environment featured in this demonstration is a close copy of the area that is currently occupied by the Parramatta Campus of Western Sydney University. In order to produce this simulation we worked very closely with a group of indigenous elders representing the Darug people. The initial terrain has been modelled using available GIS data. Apart from the terrain reconstruction, every other implementation step has been made in consultation with the indigenous elders. Elders told us about the kind of plants and animals this environment should be populated with, helped to build detailed scenarios and produced story scripts to be used in our simulation and helped with selecting the sources for avatar design. All the voices heard in the simulation are the voice recordings of the elders and all human animations in this simulation were motion captured from the elders. Figure 3 shows some of the elders in the process of recording sounds and motions for this project.

Fig. 3. Indigenous Elders Recording Motions and Sounds.

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[4] https://www.oculus.com/

One of the aims of this simulation was to develop a platform for indigenous Australians where they could preserve both verbal and non-verbal aspects of their heritage. Australian culture is unique in a sense that we still have living people around us that preserve traditions and rituals as old as 50000 years ago. Through our platform they can tell their stories, capture their moves and share those with the new generations without violating the sensitivities of their own culture (e.g. it is culturally inappropriate for some indigenous Australians to watch video footage or photos of deceased persons [4], but there are no such limitations in relation to avatars). Another goal of our work is to educate non-indigenous Australians about various aspects of the aboriginal culture and provide a learning tool that would enable embracing their cultural legacy.

References

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