Acoustic Representation of Images for the Visually Impaired

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Abstract

Current approaches for exploiting the ability of the auditory system as a mean to transmit information address this issue only to the point of using it as an auxiliary channel or restrict it to environments based on conputer graphical interfaces, which limit the complete capability for conveying information about the surroundings. The current project is aimed to tackle this from a different perspective. In order to do so, the relevant aspects of the auditory system with respect to perception are reviewed, the binaural interaural sound perception and the spatialized sound perception models are implemented, on the other hand the nature of sounds and the models for information mapping namely earcons and auditory icons, were also reviewed, guidelines were drawn from the studies that have been done on the subjects and sets of sounds were used. With this theoretical basis, a system is proposed where the combination of a basic video processing block that extracts lateral coordinates from visual markers in a scene and transforms them into azimuth angles with the model of the Head Related Transfer Function that convolves the monophonic sound source signal with the appropriate filters, generates a spatialized version of the created earcons. The system and its different parts are tested in two separate stages with the purpose of assessing the proposed blocks, sounds, aparent motion schemes and delays and findings confirming the limitations of the HRTF and the challenges of the sound sources design as well as the formulation of human related tests were made.

Introduction

Blah, blah, blah.

We three sit in the grid.
Like spades hanging in the wind.
Falling down.

Concrete poetry is a concrete poetry is a CON

$$x' = \frac{1}{x}$$

Circular arguments go round and round, they don't go down the page like this, hence this is not a circular arguments go round and round, they don't go down the page like this, hence this is not a circular arguments go round and round, they don't go down the page like this, hence this is not a circular arguments go round and round, they don't go down the page like this, hence this is not a circular arguments go round and round, they don't go down the page like this, hence this is not a circular arguments go round and round, they don't go down the page like this, hence this is not a circular arguments go round and round, they don't go down the page like this, hence this is not a

Conclusions

It is possible to do a portrait poster!

Another logo here
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