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for Sonification Tasks

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Abstract

Sonification is a fairly new term to scientists who are unaware of its multiple use cases. Even if some general definitions of the concept of sonification are commonly accepted, heterogeneous techniques – significantly different as it regards approaches, means and goals – are available. In this work we propose a reference system useful to interpret already-existing sonification instances and to plan new sonification tasks. This work aims to present a reference system for sonification using the inherent properties in the sonic output rather than the data itself. Validation has been conducted by automatically analyzing available experiments and examples, and placing them on the proposed sonification space, according to time-granularity and abstraction-level dimensions. This work can constitute the starting point for future research on computer-assisted sonification. It will be beneficial to a wide range of readers, in particular those from different disciplines looking at new ways to present and analyze data.

Keywords:

sonification, audio, sound parameters, data visualization

1. Introduction

Sonification is the transformation of data relations into perceived relations in an acoustic signal for the purposes of facilitating communication or interpretation [1]. In other words, sonification provides a way to represent

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