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Learning the Semantics of Audio Signals

**Proceedings of the
First International Workshop, LSAS 2006
Athens, Greece, December 6, 2006**

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Preface

Introduction of techniques for compressing and streaming of audio data in recent time has significantly changed the way music is consumed and archived. Personal music collections may nowadays comprise ten-thousands of music titles and even mobile devices are able to store some thousands of songs. But these magnitudes are nothing compared to the vast amount of music data digitally available on the internet.

Several features have been proposed to describe music on a low, signal-processing based level. Some of these have already been incorporated as description schemes for annotation of audio data into the MPEG-7 standard. However, in contrast to text documents that can be sufficiently well represented by statistics about the contained terms, audio data seems far too complex to be described by statistics on signals alone. Additionally, such a representation does only allow query-by-example.

Learning a mapping between audio features and contextual interpretations would be the key to solve this problem, enabling a user to formulate a query in a way that is close to his way of describing music contents, e.g. using natural language or at least combinations of terms. For this task, models describing how music is perceived are needed, as well as methods for the extraction, analysis and representation of linguistic descriptions of music. On the other hand, more sophisticated audio features and analysis of the music structure can narrow the gap. But even if a mapping can be found, it cannot be considered as universally valid. It will rather be biased depending on the user's preferences, making it necessary to think about personalization at some point as well.

The goals of this workshop were to intensify the exchange of ideas between the different research communities involved, to provide an overview of current activities in this area and to point out connections between them. The submitted contributions collected in these proceedings therefore reflect current research in this area: from feature extraction, over semantic structure annotation to complete retrieval and navigation systems for music and sound.

We like to thank all members of the program committee for supporting us in the reviewing process, the organizers of the main conference SAMT 2006 to which this workshop was assigned – especially Yannis Avrithis and Raphaël Troncy – for their kind support throughout the organizational process, and of course the authors for their willingness to revise and extend their initial submissions based on the reviewers comments.

November 2006

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