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Master's thesis

Exploring use of non-negative matrix factorization for lossy audio compression

Bc. Tomáš Drbota

Department of Theoretical Computer Science Supervisor: doc. Ing. Ivan Šimeček, Ph.D.

Acknowledgements

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Abstrakt

TODO

Klíčová slova TODO

Abstract

Non-negative matrix factorization has been successfully applied in various scenarios, mostly for analyzing large chunks of data and finding patterns in them for later use. Due to the nature of NMF, it has also seen some use in the field of image compression.

The purpose of this thesis is to research possible uses of non-negative matrix factorization in the problem of audio compression. A reference audio encoder and decoder using NMF will be implemented and various experiments using this encoder will be conducted. The results will be measured and compared to existing audio compressing solutions.

Keywords lossy, audio, compression, processing, nmf, encoding

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Introduction

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Part I Background

Chapter 1

Digital audio

Chapter 2

Non-negative matrix factorization

$\begin{array}{c} {\rm Part~II} \\ {\rm Audio~compression~using} \\ {\rm NMF} \end{array}$

Design

3.1 State of the art

CHAPTER 4

Implementation

- 4.1 Encoder
- 4.2 Decoder

CHAPTER 5

Evaluation

Conclusion

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APPENDIX A

Acronyms

todo TODO

APPENDIX B

Contents of enclosed CD

readme.txt	the me with CD contents description
 exe	the directory with executables
src	the directory of source codes
wbdcm	implementation sources
thesis	the directory of LATEX source codes of the thesis
text	the thesis text directory
thesis.pdf	the thesis text in PDF format
thesis.ps	the thesis text in PS format