UNIVERSITATEA BABEŞ-BOLYAI CLUJ-NAPOCA

FACULTATEA DE MATEMATICǍ ŞI INFORMATICǍ

SPECIALIZAREA INFORMATICĂ-ROMÂNĂ

LUCRARE DE LICENŢĂ

Detecția și eliminarea distorsiunii din înregistrări audio de pe formate analoage

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BABEŞ-BOLYAI UNIVERSITY CLUJ-NAPOCA

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

SPECIALIZATION COMPUTER SCIENCE - ROMANIAN

DIPLOMA THESIS

Distortion detection and removal on audio recordings from analog formats

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Abstract

Contents

1. Introduction. Problem statement and motivation.
   1. A brief history of audio recording formats. Analog vs digital
   2. Mechanical analog storage. Recording and playback. Transcription of audio signal to digital format
   3. Causes of distorsion in mechanical analog formats
   4. Purpose of this work
2. Related work (applications).
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   2. Nero WaveEditor
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   1. Automated marking of distorted samples. Introduction to Machine Learning
   2. Sample categorization using neural networks
5. Correction
   1. Extrapolation and linear prediction
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      1. FIR and IIR Filters. Equalizers.
      2. Linear prediction for sample repair
      3. Finding the distorted regions in an audio recording. Correction

6. Conclusions and Future Work

Bibliography

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[2]. Direct and Fast Fourier Transforms: <http://www.alwayslearn.com/DFT%20and%20FFT%20Tutorial/DFTandFFT_FFT_Overview.html>

[3]. Finite Impulse Response Filter Design:

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