

Deep Neural Networks for Sound Type Classification

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Abstract

Here is Abstract

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1 Introduction

explain structure of this thesis

In Chapter 1...

In Chapter 2...

2 Background and Motivation

2.1 Two-ears System

brief introduction to two-ears system

2.2 Sound Type Classification

2.2.1 Introduction

Input features

Task

2.2.2 Related works

Lasso, SVMs classification results

Motivation for DNN

2.3 Convolutional Neural Network Architectures in Sound Type Classification

explain some basic concepts of CNN

2.4 Toolbox:Caffe

3 Three Types of CNN Architecture in Sound Type Classification(LossFunctions)

3.1 One-Against-All

def.,motivation,result

3.2 SoftmaxWithLoss

def.,motivation,result

3.3 SigmoidCrossEntropy

def.,motivation,result introduction to loss function in CNN

4 Data Augumentation

4.1 Overview and Motivation

definition of data augumentation
related works(try different parameters)

4.2 Implementation

4.3 Results

5 Dropout Layer

6 Optimization Methods

Discuss about different solver types(SGD,Adam,Adadelata,) related works

6.1 "SGD"(Stochastic Gradient Descent)

6.2 "AdaGrad"(Adaptive Gradient)

6.3 "Adam"(Adaptive Moment Estimation)

6.4 "AdaDelta"

6.5 "NAG"(Nesterovs accelerated gradient)

6.6 "RMSprop"

7 Conclusion