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TYP PRÁCE

2018 TOMÁŠ VOZNIČKA

OSTRAVSKÁ UNIVERZITA
NÁZEV FAKULTY
NÁZEV KATEDRY

Nadpis práce

Typ práce

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Vedoucí práce: jméno vedoucího

2018

UNIVERSITY OF OSTRAVA
FACULTY NAME
DEPARTMENT NAME

Thesis Title

Thesis type

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Supervisor: jméno vedoucího

2018

Abstrakt

Abstrakt v prvním jazyce

Klíčová slova: Klíčová, slova

Abstract

Abstract in the second language

Key Words: Key, words

Já, níže podepsaný student, tímto čestně prohlašuji, že text mnou odevzdané závěrečné práce v písemné podobě i na CD nosiči je totožný s textem závěrečné práce vloženým v databázi DIPL2.

Prohlašuji, že předložená práce je mým původním autorským dílem, které jsem vypracoval samostatně. Veškerou literaturu a další zdroje, z nichž jsem při zpracování čerpal, v práci řádně cituji a jsou uvedeny v seznamu použité literatury.

V Ostravě dne 2. 4. 2018 .....

podpis

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1 Název první kapitoly

Zde napíši text první kapitoly. O obsah se nestarám, vytvoří se automaticky.

1.1 Work

Introduction to the Cellular neural networks with focus on aplication (first draft 2018)
Picked focus of the work. (Image proccesing)
Code/program sim for CNN and their image procesing capabilities (2018)
Selection of examples/experiments to do with the program and write reports on them.
Selection (2018)
Template for the report (done)
Experiments runned, with reports (most done by the end of 2018)
Summary of the work done.

1.1.1 Podsekce

2 Druhá kapitola

Každá kapitola automaticky začíná na nové straně. Pokud chcete jiné nastavení, uveďte v záhlaví volbu samepage případně sectionright.

2.1 Podkapitola

A zde se odkazuji na [1].

3 Třetí kapitola

3.1 About

This chapter will deal with examples of experiments plausible with this work. Each of following reports contains description, parametrs and results of given experinent.

3.2 Template

3.2.1 Description

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3.2.2 Setup

Input: Grayscale picture.
Boundary conditions: Fixed.
Initial output: Unimportant (all zeros)

$$A = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; B = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; Z = 1 \tag{1}$$

Figure 1: Chosen values of A,B and Z for this experiment

3.2.3 Results

Figure 2: Input

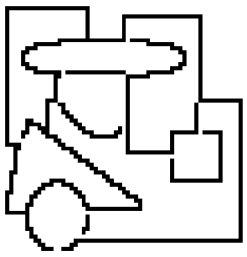

Figure 3: Output

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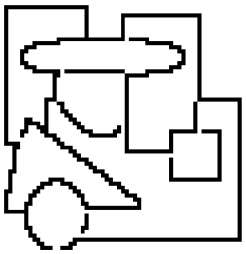

Figure 4: Alt1

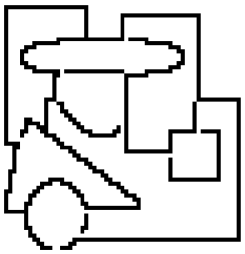

Figure 5: Alt2

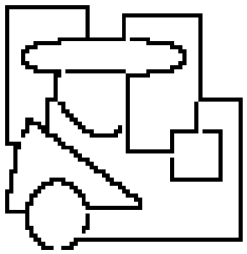

Figure 6: Alt3

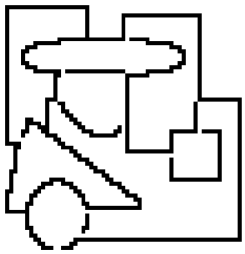

Figure 7: Alt4

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3.3 Template

3.3.1 Description

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3.3.2 Setup

Input: Grayscale picture.
Boundary conditions: Fixed.
Initial output: Unimportant (all zeros)

$$A = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; B = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; Z = 1 \tag{2}$$

Figure 8: Chosen values of A,B and Z for this experiment

3.3.3 Results

Figure 9: Input

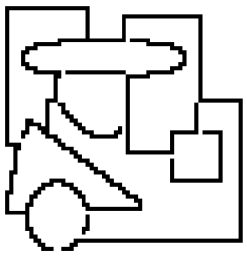

Figure 10: Output

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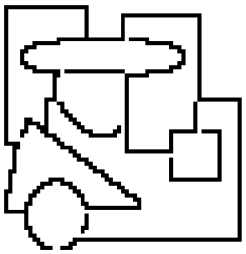

Figure 11: Alt1

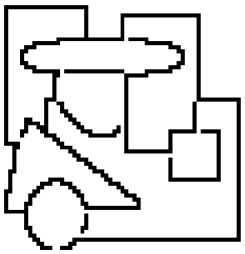

Figure 12: Alt2

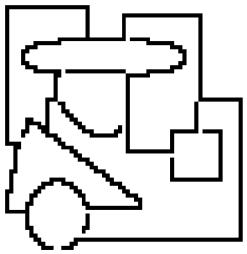

Figure 13: Alt3

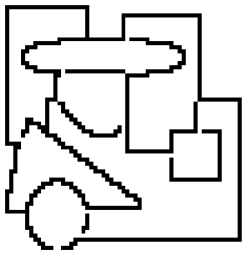

Figure 14: Alt4

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3.4 Template

3.4.1 Description

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3.4.2 Setup

Input: Grayscale picture.
Boundary conditions: Fixed.
Initial output: Unimportant (all zeros)

$$A = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; B = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; Z = 1 \tag{3}$$

Figure 15: Chosen values of A,B and Z for this experiment

3.4.3 Results

Figure 16: Input

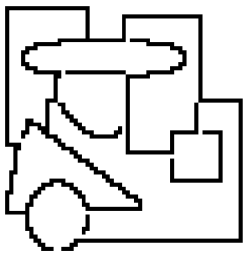

Figure 17: Output

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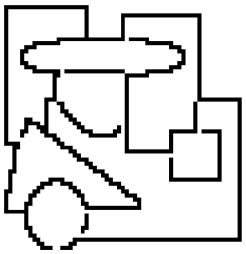

Figure 18: Alt1

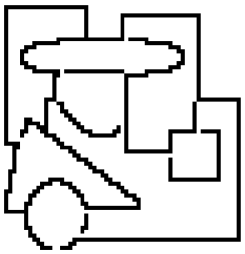

Figure 19: Alt2

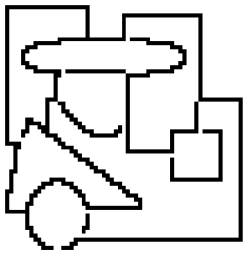

Figure 20: Alt3

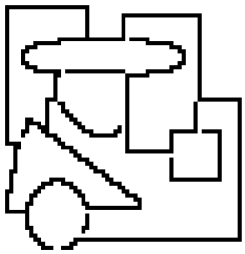

Figure 21: Alt4

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3.5 Template

3.5.1 Description

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3.5.2 Setup

Input: Grayscale picture.
Boundary conditions: Fixed.
Initial output: Unimportant (all zeros)

$$A = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; B = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; Z = 1 \tag{4}$$

Figure 22: Chosen values of A,B and Z for this experiment

3.5.3 Results

Figure 23: Input

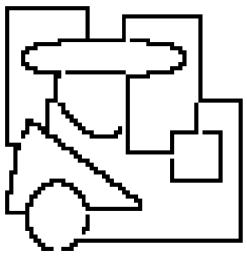

Figure 24: Output

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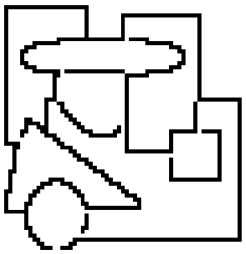

Figure 25: Alt1

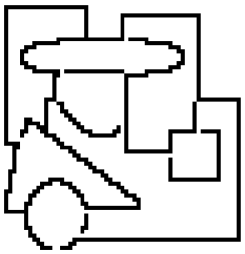

Figure 26: Alt2

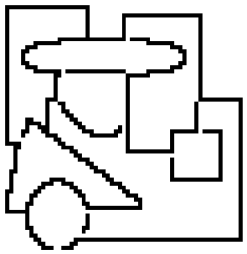

Figure 27: Alt3

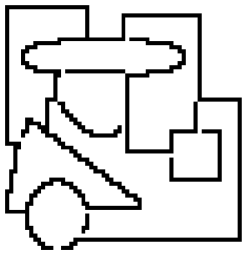

Figure 28: Alt4

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3.6 Template

3.6.1 Description

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3.6.2 Setup

Input: Grayscale picture.
Boundary conditions: Fixed.
Initial output: Unimportant (all zeros)

$$A = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; B = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; Z = 1 \tag{5}$$

Figure 29: Chosen values of A,B and Z for this experiment

3.6.3 Results

Figure 30: Input

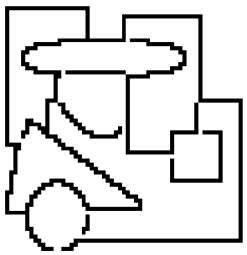

Figure 31: Output

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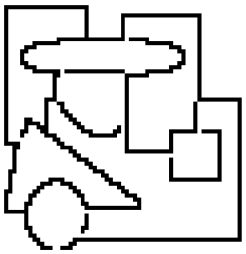

Figure 32: Alt1

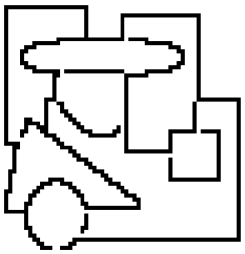

Figure 33: Alt2

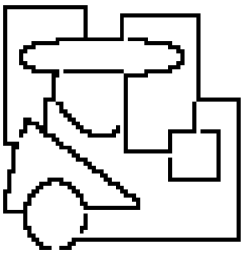

Figure 34: Alt3

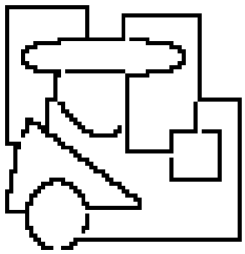

Figure 35: Alt4

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3.7 Template

3.7.1 Description

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3.7.2 Setup

Input: Grayscale picture.
Boundary conditions: Fixed.
Initial output: Unimportant (all zeros)

$$A = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; B = \begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix} \; Z = 1 \tag{6}$$

Figure 36: Chosen values of A,B and Z for this experiment

3.7.3 Results

Figure 37: Input

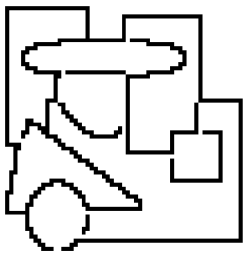

Figure 38: Output

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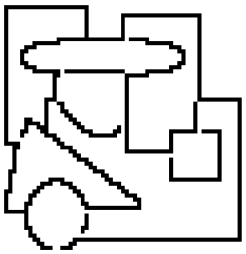

Figure 39: Alt1

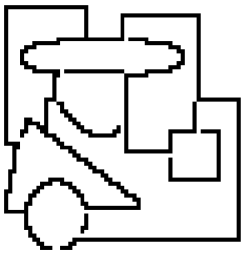

Figure 40: Alt2

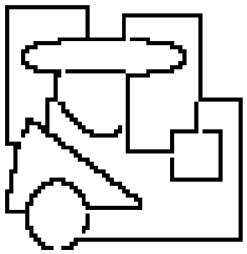

Figure 41: Alt3

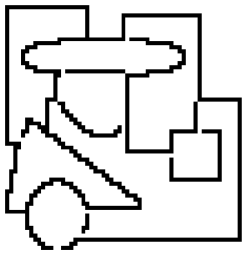

Figure 42: Alt4

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Resumé

Resumé v prvním jazyce

Summary

Summary in the second language

References

[1] *Ryanne Dolan and Guilherme DeSouza* GPU-Based Simulation of Cellular Neural Networks for Image Processing, 2009, International Joint Conference on Neural Networks, 2009.