UNIVERSITEIT VAN AMSTERDAM

MSc Artificial Intelligence

Track: track

Master Thesis

# Your Title

by

Your Name

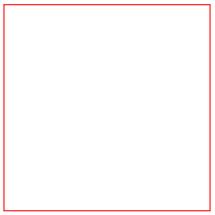
student number

February 1, 2019

Number of Credits
Period in which the research was carried out

*Supervisor:*
Dr A Person

*Assessor:*
Dr A Person



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**Abstract**

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## Contents

# Chapter 0

# Preliminaries and Notation

Hello, here is some text without a meaning. This text should show what a printed text will look like at this place. $\sin^2(\alpha)+\cos^2(\beta) = 1$. If you read this text, you will get no information $E = mc^2$. Really? Is there no information? Is there a difference between this text and some nonsense like "Huardest gefburn"? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. $\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{ab}$. This text should contain all letters of the alphabet and it should be written in of the original language. $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$. There is no need for special content, but the length of words should match the language. $a\sqrt[n]{b} = \sqrt[n]{a^n b}$.

# Chapter 1

# Introduction

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### 1.0.1 ...

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$$\bar{x} = \frac{1}{n}\sum_{i=1}^{i=n} x_i = \frac{x_1 + x_2 + \ldots + x_n}{n}$$

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$$\int_0^\infty e^{-\alpha x^2}\mathrm{d}x = \frac{1}{2}\sqrt{\int_{-\infty}^{\infty} e^{-\alpha x^2}\mathrm{d}x \int_{-\infty}^{\infty} e^{-\alpha y^2}\mathrm{d}y} = \frac{1}{2}\sqrt{\frac{\pi}{\alpha}}$$

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$$\sum_{k=0}^{\infty} a_0 q^k = \lim_{n\to\infty} \sum_{k=0}^{n} a_0 q^k = \lim_{n\to\infty} a_0 \frac{1-q^{n+1}}{1-q} = \frac{a_0}{1-q}$$

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$$x_{1,2} = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a} = \frac{-p \pm \sqrt{p^2 - 4q}}{2}$$

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$$\frac{\partial^2\Phi}{\partial x^2} + \frac{\partial^2\Phi}{\partial y^2} + \frac{\partial^2\Phi}{\partial z^2} = \frac{1}{c^2}\frac{\partial^2\Phi}{\partial t^2}$$

Hello, here is some text without a meaning $E = mc^2$. This text should show what a printed text will look like at this place. $\sqrt[n]{a} \cdot \sqrt[n]{b} = \sqrt[n]{ab}$. If you read this text, you will get no information. $\frac{\sqrt[n]{a}}{\sqrt[n]{b}} = \sqrt[n]{\frac{a}{b}}$. Really? Is there no information? Is there a difference between this text and some nonsense like “Huardest gefburn”? Kjift – not at all! A blind text like this gives you information about the selected font, how the letters are written and an impression of the look. $a\sqrt[n]{b} = \sqrt[n]{a^n b}$. This text should contain all letters of the alphabet and it should be written in of the original language. $\mathrm{d}\Omega = \sin\vartheta \mathrm{d}\vartheta \mathrm{d}\varphi$. There is no need for special content, but the length of words should match the language.

[1]

# Chapter 2

# Chapter

## 2.1 Section

### 2.1.1 Math Comments

Add all custom comment to the variables file

$$\mathcal{D}_{KL}\left(\frac{\partial}{\partial\alpha}f(x)\middle\|p_\sigma\right) \tag{2.1.1}$$

**x**

### 2.1.2 Refernces

Chapter reference: § 3

Cite: [1]

### 2.1.3 More Math

**Theorem 2.1.1** (runtime of learning a neural network)**.** *Let $k \geq 3$. For every $n$, let $(V, E)$ be a layered graph with $n$ input nodes, $k+1$ nodes at the (single) hidden layer, where one of them is the constant neuron, and a single output node. Then, it is NP-hard to implement the ERM rule with respect to $\mathcal{H}_{V_n,E_n,sign}$.*

*Proof.* Well let the supervisor to that... □

(similar setup for definitions and so on)

# Chapter 3

# Experiments

# Chapter 4

# Conclustion and Future Work

## Bibliography

[1] Yann LeCun and Corinna Cortes. “MNIST handwritten digit database”. In: (2010). URL: http://yann.lecun.com/exdb/mnist/.

# Appendices

# Appendix A

# Derivations

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