

# **This is the Title of my Bachelor Thesis**

**Bachelor Thesis in Computer Science**

**Erika Musterfrau, January 2018**

A thesis submitted in partial fulfillment of the requirements  
for the degree of Bachelor of Science (B.Sc.).

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## **Abstract**

Robots should be able to learn skills from humans on all levels of abstraction. While much insight has been gained at the level of motor primitives, the recognition of intention in human behavior and its formal abstraction is still a challenge. This work presents a method that enables robots to learn human-demonstrated concepts on a symbolic, first-order logic based representational layer. The focus lies on the recognition of action effects, symbol grounding and concept formalization.

## **Declaration of Originality**

Hereby I declare that this thesis is my own work and has not been submitted in any form for another degree or diploma at any university or other institute of tertiary education. Information derived from the published and unpublished work of others has been acknowledged in the text and all used resources are indicated in the list of references.

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Erika Musterfrau, Weingarten, Jan. 29th 2018

## Contents

# 1 Introduction

An interesting definition of artificial intelligence is given in ?, because it is independent from the current state of research. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. AI and object relational rules are discussed in ?.

## 1.1 Alan Turing and the Turing Machine

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Figure 1: Alan Turing as a young student.

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## 1.2 Carl Friedrich Gauss and the Normal Distribution

The young Alan Turing is shown in Figure ?? . Ut wisi enim ad minim veniam, quis nostrud exerci tation ullamcorper suscipit lobortis nisl ut aliquip ex ea commodo consequat. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis at vero eros et accumsan et iusto odio dignissim qui blandit praesent luptatum zzril delenit augue dui dolore te feugait nulla facilisi.



Figure 2: C. F. Gauss and the normal distribution on a german banknote.

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$$f(x) = \frac{1}{\sigma\sqrt{2\pi}} e^{-\frac{(x-\mu)^2}{2\sigma^2}} \quad (1)$$

Carl-Friedrich Gauss is shown on the german banknote in Figure ?? . You can find Equation ?? on the bank note as well. Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, At accusam aliquyam diam diam dolore dolores duo eirmod eos erat, et nonumy sed tempor et et invidunt justo labore Stet clita ea et gubergren, kasd magna no rebum. sanctus sea sed takimata ut vero voluptua. est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur

## 2 Related Work

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$S$  is an array of integer  $i$  in  $1 : \text{length}(S) - 1$   $j$  in  $(i + 1) : \text{length}(S)$   $S[i] > S[j]$  swap  $S[i]$  and  $S[j]$

The Bubblesort algorithm is shown in Algorithm ?? . It shouldn't be used for large arrays because bubblesort has a computation complexity of  $\mathcal{O}(n^2)$  while there are sorting algorithms with a complexity  $\mathcal{O}(n \log n)$ . Duis autem vel eum iriure dolor in hendrerit in vulputate velit esse molestie consequat, vel illum dolore eu feugiat nulla facilisis. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua.

7C0	hexadecimal
3700	octal
11111000000	binary
1984	decimal

Table 1: A table with merged cells.

A table with merged cells is shown in Table ?? . At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, At accusam aliquyam diam diam dolore dolores duo eirmod eos erat, et nonumy sed tempor et et invidunt justo labore Stet clita ea et gubergren, kasd magna no rebum. sanctus sea sed takimata ut vero voluptua. est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur

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## 2.1 Same Problem but Different Solution

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1	2	3
4	5	6
7	8	9

Table 2: A table with right side left open.

## 3 Conclusion

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