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Machine Teaching using complexity of instances and minimaztion to select instance

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Abstract

In todays society AI and machine learning is becoming more and more relevant. (find source) For instance, some might say the age old problem of the protein folding has finally been solved thanks to Deep mind and their Alphafold 2 (source). Their deep learning approach achieved close to 90% accuray, matching experimental approaches. However, even if we now can get greatly accurat approximation solutions to the question of protein folding, the question of how each protein fold into their 3D structure has not been solved yet. Motivated by this fact that knowing solutions to instances not nessecery gives insight to the question a large, as well as the expaning use of AI in our everday life [netflix, recommendation systems]. This places Explaineable AI as a topic of of extrem relevancy in the comming years. This thesis will look at

Acknowledgements

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`Your name`

Friday 25th February, 2022

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Listings

Chapter 1

Introduction

In this master thesis we implement and discuss the reulst of the propsed model for machine teaching.

1.1 Background

Lorem ipsum dolor sit amet, cu graecis propriae sea. Eam feugiat docendi an, ei scripta blandit pri. Nonumes delicata reprimique nam ut. Eu suas alterum concludaturque est, ferri mucius sensibus id sed [1].

We can do glossary for acronymes and abriviations also: Software as a Service (SaaS). As you see the first time it is used, the full version is used, but the second time we use SaaS the short form is used. It is also a link to the lookup.

1.1.1 Listings

You can do listings, like in Listing 1.1

Listing 1.1: Look at this cool listing. Find the rest in Appendix A.1

```
1 $ java -jar myAwesomeCode.jar
```

You can also do language highlighting for instance with Golang: And in line 6 of Listing 1.2 you can see that we can ref to lines in listings.

Listing 1.2: Hello world in Golang

```
1 package main
2
3 import "fmt"
4
5 func main() {
6     fmt.Println("hello world")
7 }
```

1.1.2 Figures

Example of a centred figure

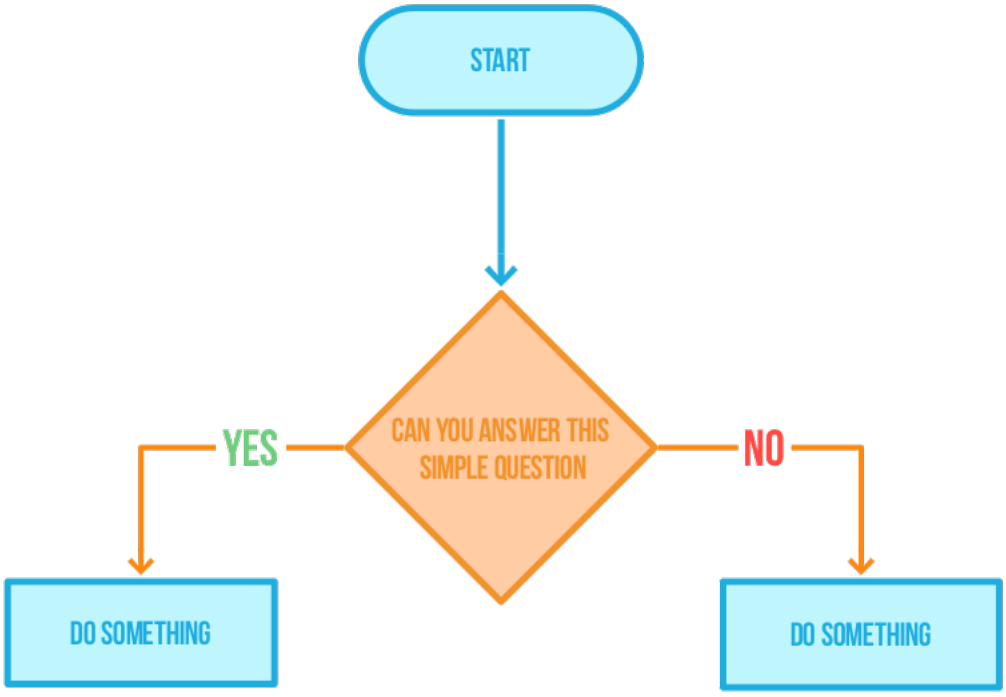

Figure 1.1: Caption for flowchart

Credit: Acme company makes everything `https://acme.com/`

1.1.3 Tables

We can also do tables. Protip: use `https://www.tablesgenerator.com/` for generating tables.

Table 1.1: Caption of table

Title1	Title2	Title3
data1	data2	data3

1.1.4 Git

Git is fun, use it!

Chapter 2

Model

In this thesis there are multiple "models" and we will therefor establish cleare notations and descriptions of of each.

2.1 θai - the AI

With θai we refere to the AI model we are trying to teach to a human. In this thesis we will experimented with two different implementations of θai. One being a convolutional nural network, refered to as CNN, and the other being a fully connected nural network, refrenced to as NN.

2.2 θLM - modeling human learner

Chapter 3

Dataset

In this chapter we discuss how the dataset was choosen, how we create it, and the different parameters acceseable when creating it.

3.1 Background

In deciding how to layout our dataset our first choice was in desciding the task our AI was going to learn. Something to take into concideration when selecting the task for the AI was that we wanted something simple to implement and tweak while still having some challange to an AI. We chose the task of predicting a boolean function given bitmaps of literals with value true. This was done [beacuse!].

Glossary

Git Git is a Version Control System (VCS) for tracking changes in computer files and coordinating work on those files among multiple people.

List of Acronyms and Abbreviations

SaaS Software as a Service.

VCS Version Control System.

Bibliography

[1] Diego Ongaro and John Ousterhout. In search of an understandable consensus algorithm. In *Proceedings of the 2014 USENIX Conference on USENIX Annual Technical Conference*, USENIX ATC'14, pages 305–320, Berkeley, CA, USA, 2014. USENIX Association. ISBN 978-1-931971-10-2.

Appendix A

Generated code from Protocol buffers

Listing A.1: Source code of something

```
1 System.out.println("Hello Mars");
```