Using LaTeX

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Abstract

LaTeX is an extremely powerful typesetting system. This document demonstrates some basic usage.

1 Introduction

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Here is a reference to a scientific paper, you can find it in the references. [1] You can do it like this, e.g., if you want to talk about the paper by LeCun, Bengio, et al. [1] You can also use [1]

Paragraphs are separated by empty lines. It might be a good idea to put every sentence on a separate line – that way `git` will work on a sentence-by-sentence basis.

2 Formatting in LaTeX

2.1 Lists

You can make nice lists in LaTeX:

- First item
- Second item

Or like this:

1. First item
   (a) Sub element
2. Second item
   - Another sub element

2.2 Text Decoration

Different text decorations like *textit*, *emph* (which might render differently than here), **textbf** are possible, and it might be a good idea to find a LaTeXcheat-sheet to find out more.

You can put things in quotes like "Hey, look at that!", or “Hey, look at that!”. Notice these are not identical.

2.3 Quoteblocks

Quote blocks look nice:

> *I believe that in about fifty years' time it will be possible, to programme computers (..) to make them play the imitation game so well that an average interrogator will not have more than 70 per cent chance of making the right identification after five minutes of questioning.* [2]

2.4 Tables

Things like tables are obviously supported in LaTeX, see table 1.

2.5 Equations

The cost function we most often use in classification is shown in Equation 1.

Table 1: Likert scale and scoring

Score	Answer
-2	Strongly disagree
-1	Disagree to some extent
1	Agree to some extent
2	Strongly agree

$$J_\theta(X) = -\frac{1}{m}\sum(Y \cdot log(h_\theta(X)) + (1-Y) \cdot log(1-h_\theta(X)) \tag{1}$$

2.6 Figures

Figure 1 shows the reduced cost over number of iterations running batch gradient descent.

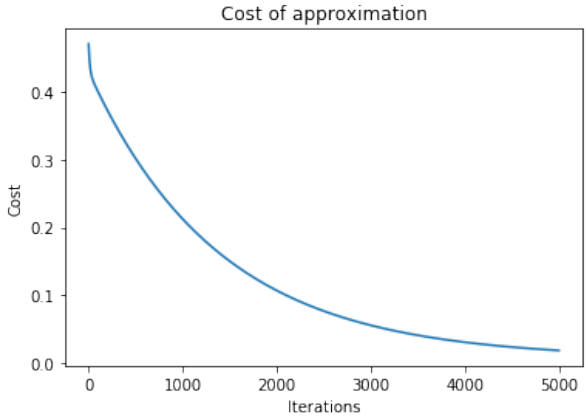

Figure 1: Reduction of the cost function over iterations.

References

[1] Yann LeCun, Yoshua Bengio, et al. "Convolutional networks for images, speech, and time series". In: *The handbook of brain theory and neural networks* 3361.10 (1995), p. 1995.

[2] Alan M Turing. "Computing machinery and intelligence". In: *Mind* 59.236 (1950), pp. 433–460.