

Seminar Cloud Computing

Exploring the Frontiers of TinyML: Applications and Techniques for AI at the Edge

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Abstract

This abstract should contain a short summary of what this article is about. That is, a short introduction into the topic, the main issues discussed, any why this is interesting. Finally, some very short conclusion/results of the discussed ideas. From this, the reader should be able to estimate whether it is worth to read on.

1 Introduction

The introduction of a scientific work usually consists of the following parts:

- motivation,
- issues or drawbacks with existing solutions of a problem at hand,
- overview of new contribution and rest of the paper.

In the motivation you should explain why a given topic is interesting at all, and also, why solutions are important from a scientific point of view. There already may be a lot of existing solutions. Thus, it is important for the reader to understand the issues with these solutions, and why they are not enough for e.g. a specific scenario.

After the motivation, you should explain the basic idea of your new contribution to solve the problem at hand, and give a short overview of how this works and why it is better than all other existing solutions. Finally, a short overview to the rest of the work should be provided, which may pick out the most important points. As any idea or solution proposed must be shown to be valid and useful, every scientific paper



Figure 1: The caption explaining what can be seen in the image/figure. Readers often read captions first if they do not have much time. Thus, it is important to find a good short explanation.

must have some evaluation and discussion. It may be useful to select important results, and mention them already as last part of the introduction, as motivation for the reader to read on. In summary, a good introduction makes the reader so interested into the topic and proposed new contributions that he cannot wait to read on.

2 Basic Rules for Using Latex

First, we want to refer to the figures and the introduction. See Figure 1 for the first floating figure with column width, and Figure 2 for the one using the full page width. And here, we want to put a reference to the introduction which is Section 1.

In translating this template from German to English, I decided to stop here. There is not really much to get from the German text following. Anything Latex-related can also be looked up on the net. There is a *huge* number of tutorials, and so on.

Please do not use too much different font sizes and styles. It should be completely enough to go to *italic mode* for emphasizing something, such as newly introduced terms. You can refer to other parts of your paper (e.g. see Sec. 1). Quoting in Latex is done “this way”. Further, you may have problems with

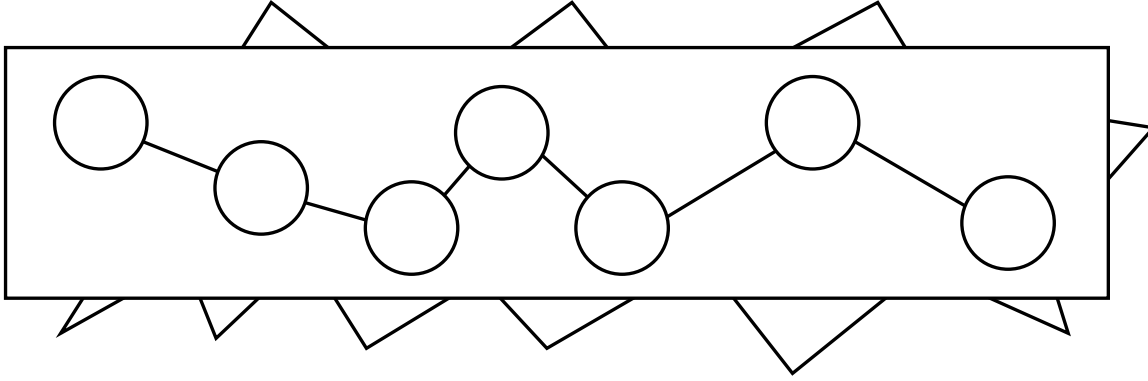


Figure 2: A nice caption. The larger width allows for more text without taking too much space.

punctuation characters. Most of them just need to be prefixed by a backslash, for others you may temporarily switch to math mode: `$ & % # { } [] - @ § < > \ @ ~ /`

Talking about math mode: you can do some very nice things this way:

$$a^2 + b^2 = c^2 \quad (1)$$

Again, referring to this equation is easy (see Eq. 1). If you do not need numbering for equations, use the *displaymath* environment:

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

Short equations simply can be used within the regular text flow, such as with $x \rightarrow \infty$. Obviously, math is fun with LaTeX.

3 Enumerations

Enumerations using bullet points:

- this is the first item of this list of interesting facts,
- second item,
- and the last one.

They also can be numbered:

1. item one,
2. item two,
3. item three.

As shown, numbers always should be written out in the text, unless the belong to a title or a formula.

4 Literature

At the end of your paper, you should have a nice list of used literature. For scientific papers, this actually is needed. You always use other works as base for your own. Usually, you are not the only one thinking about a given difficult problem, so there is always related work which *must* be cited if known to the author.

Further, if you want to copy relevant sentences from an original paper, you *have* to cite them correctly, for example in this way:

“I think there is a world market for maybe five computers.” (T.J. Watson, IBM, 1943)

The rest of the work (especially all the regular text) must be written/phrased by you. If you write about some results or fact stated in another paper, you should refer to it. The ‘Analytical Engine’ — a mechanical calculation machine — created by Charles Babbage in the year 1838 was based on the decimal system [4].

5 Figures and Tables

No need to understand the following text.

Figures can span either one column (see Figure 1) or the full page width (see Figure 2). LaTeX automatically tries to find the best place for these floating figures. To influence that, you may move the figure a bit to the front of your text. As can be seen in Figure 1, using images usually results in very bad quality. Better use vector formats: draw the figures with *xfig* or *inkscape*, and save them as PDF. As example of this procedure, see Figure 2).

	Column 1	Column 2	Column 3	Column 4	Column 5	Column 6	Amount
Row 1	This column has a maximal width of 2 cm.	X	X	X	X	X	126,00
Row 2		This entry occupies three columns.			X	X	8,00
Sum							134,00

Table 1: This is the caption of the table.

Similar to figures, tables can be referred to in the text (see Tab. 1). However, sometimes it is useful to embed tables directly in the regular text flow:

	Column 1	Column 2
Row 1		
Row 1		

6 Summary

The summary shortly repeats the core ideas and results from the previous text. If the reader has problems understanding the summary he knows that he should go back to the relevant sections. Thus, the last section should consist of:

- a summary,
- an evaluation of what was done, importance of this work,
- what is left, what still needs to be done,
- short outlook into the future.

Last but not least, we can explain anything missing yet in the evaluation done in this paper. This allows to refer to what readers can expect from authors in the future.

References

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