Role of LLMs in Software Configuration (SS2024) - Seminar Automated Software Engineering

Sonja Klein¹

1- School of First Author - Dept of First Author Address of First Author's school - Country of First Author's school

Abstract. Type your 100 words abstract here. Please do not modify the style of the paper. In particular, keep the text offsets to zero when possible (see above in this 'SeminarV2.tex' sample file). You may *slightly* modify it when necessary, but strictly respecting the margin requirements is mandatory (see the instructions to authors for more details).

In the realm of automated software engineering, the emergence of Large Language Models (LLMs) has sparked significant interest and discussion, particularly in their role within software configuration. LLMs possess remarkable capabilities in natural language understanding, generation, and pattern recognition. These models can potentially revolutionize how software configurations are managed and tackled, offering solutions that range from assisting in decision-making processes to detecting misconfigurations. Motivated by the complexities of modern software systems, which often involve intricate configurations across various platforms, environments, and technologies, researchers and practitioners are exploring the role of LLMs in software configuration. The integration of LLMs in software configuration raises intriguing questions and challenges, which we want to understand.

1 Typesetting an Seminar document using LATEX

This is a sample file. Please use this file to correctly typeset a submission to the Seminar conference. The associated pdf file will help you to have an idea of what your paper should look like.

1.1 Page format and margins

Please avoid using DVI2PDF or PS2PDF converters: some undesired shifting/scaling may occur when using these programs It is strongly recommended to use the DVIPS converters. Check that you have set the paper size to A4 (and NOT to letter) in your dvi2ps converter, in Adobe Acrobat if you use it, and in any printer driver that you could use. You also have to disable the 'scale to fit paper' option of your printer driver. In any case, please check carefully that the final size of the top and bottom margins is 5.2 cm and of the left and right margins is 4.4 cm.

1.2 Additional packages and functions

Update the sample file according to your text. You can add packages or declare new LATEX functions if and only if there is no conflict between your packages and the SeminarV2.cls style file.

1.3 Style information

This next chapter will give you some information about the style of the document.

1.3.1 Page numbers

Please do not add page numbers to this style; page numbers will be added by the publisher.

1.3.2 Page headings

Do not add headings to your document.

1.4 Mathematics

You may include additional packages for typesetting algorithms, mathematical formula or to define new operators and environments if and only if there is no conflict with the SeminarV2.cls file.

It is recommended to avoid the numbering of equations when not necessary. When dealing with equation arrays, it could be necessary to label several (in)equalities. You can do it using the '\stackrel' operator (see the SeminarV2.tex source file); example:

$$c = |d| + |e|$$

$$\stackrel{\text{(a)}}{=} d + e$$

$$\stackrel{\text{(b)}}{\geq} \sqrt{f} , \qquad (1)$$

where the equality (a) results from the fact that both d and e are positive while (b) comes from the definition of f.

1.5 Tables and figures

Figure 1 shows an example of figure and related caption. Do not use too small symbols and lettering in your figures. Warning: your paper will be printed in black and white in the proceedings. You may insert color figures, but it is your responsibility to check that they print correctly in black and white. The color version will be kept in the Seminar electronic proceedings available on the web.

Table 1 shows an example of table.

Fig. 1: Any questions?

| ID | age | weight |
|----|-----|--------|
| 1 | 15 | 65 |
| 2 | 24 | 74 |
| 3 | 18 | 69 |
| 4 | 32 | 78 |

Table 1: Age and weight of people.

2 Citation

This SeminarV2.tex file defines how to insert references, both for BiBTeX and non-BiBTeX users. Please read the instructions in this file.

References

- [1] S. Haykin, editor. Unsupervised Adaptive Filtering vol. 1: Blind Source Separation, John Willey and Sons, New York, 2000.
- [2] N. Delfosse and P. Loubaton, Adaptibe blind separation of sources: A deflation approach, Signal Processing, 45:59-83, Elsevier, 1995.
- [3] S. Cruces, A. Cichocki and S. Amari, The minimum entropy and cumulants based contrast functions for blind source extraction. In J. Mira and A. Prieto, editors, proceedings of the 6th international workshop on artificial neural networks (IWANN 2001), Lecture Notes in Computer Science 2085, pages 786-793, Springer-Verlag, 2001.
- [4] F. Vrins, C. Archambeau and M. Verleysen, Towards a local separation performances estimator using common ICA contrast functions? In M. Verleysen, editor, proceedings of the 12th European Symposium on Artificial Neural Networks (ESANN 2004), d-side pub., pages 211-216, April 28-30, Bruges (Belgium), 2004.
- [5] J. V. Stone and J. Porrill, Undercomplete independent component analysis for signal separation and dimension reduction. Technical Report, Psychology Department, Sheffield University, Sheffield, S10 2UR, England, October 1997.