A LaTeX Demo for AAAI

Jinliang Xu
Beijing University of Posts and Telecommunications

Abstract

AAAI creates proceedings, working notes, and technical reports directly from electronic source furnished by the authors. To ensure that all papers in the publication have a uniform appearance, authors must adhere to the following instructions.

Introduction

Congratulations on having a paper selected for inclusion in an AAAI Press proceedings or technical report! This document details the requirements necessary to get your accepted paper published using LaTeX. If you are using Microsoft Word, instructions are provided in a different document. If you want to use some other formatting software, you must obtain permission from AAAI Press first.

The instructions herein are provided as a general guide for experienced LaTeX users who would like to use that software to format their paper for an AAAI Press publication or report. If you are not an experienced LaTeX user, do not use it to format your paper. AAAI cannot provide you with support and the accompanying style files are **not** guaranteed to work. If the results you obtain are not in accordance with the specifications you received, you must correct your source file to achieve the correct result.

These instructions are generic. Consequently, they do not include specific dates, page charges, and so forth. Please consult your specific written conference instructions for details regarding your submission. Please review the entire document for specific instructions that might apply to your particular situation. All authors must comply with the following:

What Files to Submit

You must submit the following items to ensure that your paper is published:

- A fully-compliant PDF file.
- Your LaTeX source file submitted as a **single** .tex file (do not use the "input" command to include sections of your paper — every section must be in the single source file). The only exception is the bibliography, which you may include separately. Your source must compile on our system, which includes the standard LaTeX support files.
- All your graphics files.
- The LaTeX-generated files (e.g. .aux and .bib file, etc.) for your compiled source.
- All the nonstandard style files (ones not commonly found in standard LaTeX installations) used in your document (including, for example, old algorithm style files). If in doubt, include it.

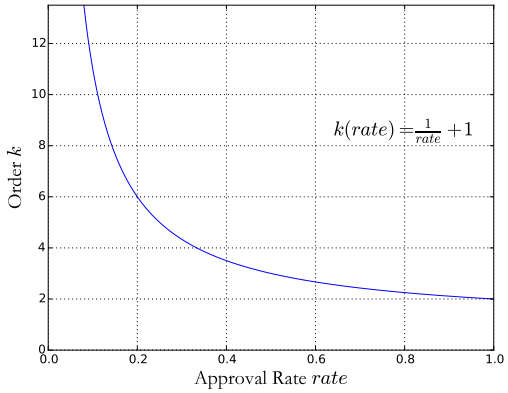

Figure 1: Adjustment of a worker's order with his approval rate.

Credits

Any credits to a sponsoring agency should appear in the acknowledgments section, unless the agency requires different placement. If it is necessary to include this information on the front page, use \thanks in either the \author or \title commands. For example:

\title{Very Important Results in AI\thanks{This work is supported by everybody.}}

Multiple \thanks commands can be given. Each will result in a separate footnote indication in the author or title with the corresponding text at the botton of the first column of the document. Note that the \thanks command is fragile. You will need to use \protect.

Please do not include \pubnote commands in your document.

Producing Reliable PDF Documents with LaTeX

Generally speaking, PDF files are platform independent and accessible to everyone. When creating a paper for a proceedings or publication in which many PDF documents must be merged and then printed on high-resolution PostScript RIPs, several requirements must be met that are not normally of concern. Thus to ensure that your paper will look like it does when printed on your own machine, you must take several precautions:

- Use type 1 fonts (not type 3 fonts)
- Use only standard Times, Nimbus, and CMR font packages (not fonts like F3 or fonts with tildes in the names or fonts—other than Computer Modern—that are created for specific point sizes, like Times˜19) or fonts with strange combinations of numbers and letters
- Embed all fonts when producing the PDF
- Do not use the [T1]fontenc package (install the CM super fonts package instead)

Related Work

Among the four problems of crowdsourcing, namely incentive, quality, latency and community improvement, quality is the core, and the other three serve for it in essence. The key issue is how to estimate the worker proficiency (Simpson and Roberts 2015) or her evaluation reliability for a specific task (Miller, Resnick, and Zeckhauser 2005; Radanovic and Faltings 2013). One natural approach is to use *gold standard* (Liu et al. 2012; Li et al. 2016), i.e. a small amount of tasks of which the solutions are known prior to the requester while not to the workers, which can be utilized to assess each worker's proficiency on the rest tasks. However, gold standard is expensive to perform as ground truth is costly to obtain. In addition, gold standard works not well in heterogenous crowdsourcing, where a worker may be proficient at only a subset of tasks with a certain topic (Zhang and Sugiyama 2015). Taking the name entity recognition tasks in natural language processing (Ritter et al. 2011) as an example, a worker may be good at recognizing names of movie stars, but not be familiar with sports teams. A step further, studies in (Ipeirotis et al. 2014; Simpson and Roberts 2015) assume that the tasks can be categorized into several topics and workers differ in their abilities with different topic tasks, therefore the quality of data can be improved by assigning tasks to the most appropriate workers. But nonetheless, it is still not enough as estimation of workers' abilities relies heavily on topic categorization. Another approach focuses on developing statistical techniques to post-process the collected data with uneven quality in order to improve its quality (Raykar et al. 2010; Zhou et al. 2014). However, it is appropriate only in scenarios with repeated participation by the same worker, which seems impractical as worker crowds online is very large and is changing rapidly realtime and the number of tasks assigned to most workers is always small. In fact, the current crowdsourcing platforms such as the aforementioned Mturk and CrowdFlower, only use a worker's history records to compute her reputation (e.g. approval rate, i.e. the percentage of her reported solutions approved by the requester), and adopt the reputation as the only parameter to decide whether to assign a coming task to the worker or not. Simple through, the vulnerability is obvious as this current mechanism cannot detect a malicious worker who performs as normal to gain enough reputation in early days, and afterwards cheat the platform (Hoffman, Zage, and Nita-Rotaru 2009).

References

[Hoffman, Zage, and Nita-Rotaru 2009] Hoffman, K.; Zage, D.; and Nita-Rotaru, C. 2009. A survey of attack and defense techniques for reputation systems. *ACM Computing Surveys (CSUR)* 42(1):1.

[Ipeirotis et al. 2014] Ipeirotis, P. G.; Provost, F.; Sheng, V. S.; and Wang, J. 2014. Repeated labeling using multiple noisy labelers. *Data Mining and Knowledge Discovery* 28(2):402–441.

[Li et al. 2016] Li, G.; Wang, J.; Zheng, Y.; and Franklin, M. 2016. Crowdsourced data management: A survey. *IEEE Transactions on Knowledge and Data Engineering* PP(99):1–23.

[Liu et al. 2012] Liu, X.; Lu, M.; Ooi, B. C.; Shen, Y.; Wu, S.; and Zhang, M. 2012. Cdas: a crowdsourcing data analytics system. *Proceedings of the VLDB Endowment* 5(10):1040–1051.

[Miller, Resnick, and Zeckhauser 2005] Miller, N.; Resnick, P.; and Zeckhauser, R. 2005. Eliciting informative feedback: The peer-prediction method. *Management Science* 51(9):1359–1373.

[Radanovic and Faltings 2013] Radanovic, G., and Faltings, B. 2013. A robust bayesian truth serum for non-binary signals. In *Proceedings of the Twenty-Seventh AAAI Conference on Artificial Intelligence*, 833–839. AAAI Press.

[Raykar et al. 2010] Raykar, V. C.; Yu, S.; Zhao, L. H.; Valadez, G. H.; Florin, C.; Bogoni, L.; and Moy, L. 2010. Learning from crowds. *Journal of Machine Learning Research* 11(Apr):1297–1322.

[Ritter et al. 2011] Ritter, A.; Clark, S.; Etzioni, O.; et al. 2011. Named entity recognition in tweets: an experimental study. In *Proceedings of the Conference on Empirical Methods in Natural Language Processing*, 1524–1534. Association for Computational Linguistics.

[Simpson and Roberts 2015] Simpson, E., and Roberts, S. 2015. Bayesian methods for intelligent task assignment in crowdsourcing systems. In *Decision Making: Uncertainty, Imperfection, Deliberation and Scalability*. Springer. 1–32.

[Zhang and Sugiyama 2015] Zhang, H., and Sugiyama, M. 2015. Task selection for bandit-based task assignment in heterogeneous crowdsourcing. In *2015 Conference on Technologies and Applications of Artificial Intelligence (TAAI)*, 164–171. IEEE.

[Zhou et al. 2014] Zhou, D.; Liu, Q.; Platt, J. C.; and Meek, C. 2014. Aggregating ordinal labels from crowds by minimax conditional entropy. In *ICML*, 262–270.