

NLP & Machine Learning Applied: Video Game Reviews

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Abstract

Despite the ambiguity of the concept, much research has been done in the area of detecting “fake” reviews. It is, however, often difficult to build corpora containing reviews that are definitively “fake” or “true”. It is simpler to reframe the issue in terms of the amount of experience a reviewer has with a product: given a review, can we tell anything about the level of experience the reviewer has with the reviewed product? In this exploratory paper, I will detail a research project whose aim was to relate video game reviews to proxies for reviewer experience, such as number of hours played, number of times marked as helpful, and other related review/user attributes, using natural language processing and machine learning techniques. The ultimate end is to produce a capability for ranking or filtering reviews, which could be used in addition to or in place of other fake review or spam filtering algorithms. A less grand aim of the project was to scrape review data from the Steam video game website and make it publicly available. This data will be described at length.

1 Credits

I would like to thank both Janette Martinez and Emily Olshefski for their help in the initial iteration of this work as part of a class project. They helped lay out the problem, make decisions regarding the source of the data and the games for which data was collected, and also write some of the preprocessing code. Some sections of this paper build on the final paper for that class project, which they took a lead in writing.

2 Introduction

The following instructions are directed to authors of papers submitted to ACL-2015 or accepted for publication in its proceedings. All authors are required to adhere to these specifications. Authors are required to provide a Portable Document Format (PDF) version of their papers. **The proceedings are designed for printing on A4 paper.**

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3 General Instructions

Manuscripts must be in two-column format. Exceptions to the two-column format include the title, authors’ names and complete addresses, which must be centered at the top of the first page, and any full-width figures or tables (see the guidelines in Subsection 3.5). **Type single-spaced.** Start all pages directly under the top margin. See the guidelines later regarding formatting the first page. The manuscript should be printed single-sided and its length should not exceed the maximum page limit described in Section 6. Do not number the pages.

3.1 Electronically-available resources

We strongly prefer that you prepare your PDF files using L^AT_EX with the official ACL 2015 style file (acl2015.sty) and bibliography style (acl.bst). These files are available at <http://acl2015.org>. You will also find the document you are currently reading (acl2015.pdf) and its L^AT_EX source code (acl2015.tex) on this website.

You can alternatively use Microsoft Word to produce your PDF file. In this case, we strongly recommend the use of the Word template file (acl2015.dot) on the ACL 2015 website (<http://acl2015.org>). If you have an option, we recommend that you use the L^AT_EX2e version. If you will be using the Microsoft Word template, we suggest that you anonymize your source file so that the pdf produced does not retain your identity. This can be done by removing any personal information from your source document properties.

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Format manuscripts two columns to a page, in the manner these instructions are formatted. The exact dimensions for a page on A4 paper are:

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```
\usepackage{times}
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```

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Type of Text	Font Size	Style
paper title	15 pt	bold
author names	12 pt	bold
author affiliation	12 pt	
the word “Abstract”	12 pt	bold
section titles	12 pt	bold
document text	11 pt	
captions	11 pt	
abstract text	10 pt	
bibliography	10 pt	
footnotes	9 pt	

Table 1: Font guide.

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“(Gusfield, 1997) showed that ...”

you use

“Gusfield (1997) showed that ...”

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References: Gather the full set of references together under the heading **References**; place the section before any Appendices, unless they contain references. Arrange the references alphabetically by first author, rather than by order of occurrence in the text. Provide as complete a citation as possible, using a consistent format, such as the one for *Computational Linguistics* or the one in the *Publication Manual of the American Psychological Association* (American Psychological Association, 1983). Use of full names for authors rather than initials is preferred. A list of abbreviations for common computer science journals can be found in the *ACM Computing Reviews* (Association for Computing Machinery, 1983).

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5 Translation of non-English Terms

It is also advised to supplement non-English characters and terms with appropriate transliterations and/or

¹This is how a footnote should appear.

²Note the line separating the footnotes from the text.

translations since not all readers understand all such characters and terms. Inline transliteration or translation can be represented in the order of: original-form transliteration “translation”.

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Long papers may consist of up to 8 pages of content, plus two extra pages for references. Short papers may consist of up to 4 pages of content, plus two extra pages for references. Papers that do not conform to the specified length and formatting requirements may be rejected without review.

Acknowledgments

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References

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