



2nd International Conference on Computer Science and Computational Intelligence 2017, ICCSCI
2017, 13-14 October 2017, Bali, Indonesia

Development of Review Rating and Reporting in Open Journal System

Willy¹, Wirya Samatha Priatna¹, Sonya Rapinta Manalu^{1*}, Arta Moro Sundjaja²,
Noerlina²

¹Computer Science Department, School of Computer Science, Bina Nusantara University, Jl. K. H. Syahdan No. 9, Kemanggis, Palmerah, Jakarta, Indonesia

²Information System Department, School of Information System, Bina Nusantara University, Jl. K. H. Syahdan No. 9, Kemanggis, Palmerah, Jakarta, Indonesia

Abstract

This article describes the development of review rating and reporting features for Open Journal System (OJS), an open-source journal publishing platform used by more than 10,200 journals all over the world. Journal editors are able to receive rating recommendation automatically as a decision support in grading the review quality of peer reviewers. In addition, reporting features are also implemented to facilitate publishers in documenting their journals. Testing and evaluation show that both features are effective to be used in OJS-based journals.

© 2017 The Authors. Published by Elsevier B.V.

Peer-review under responsibility of the scientific committee of the 2nd International Conference on Computer Science and Computational Intelligence 2017.

Keywords: peer review; rating; Open Journal System; report; recommender system

1. Introduction

In the world of academia, peer reviewing is a widely accepted means to evaluate a scientific work by experts in

* Corresponding author. Tel.: +62 21-534-5830; fax: +62 21 530-0244.

E-mail address: smanalu@binus.edu

the same field (peer reviewers), in order to determine and ensure that the submitted work is qualified to be published. A publication that has been peer reviewed is considered a relevant contribution to the field¹. Hence, it is crucial to ensure that reviews are effective in assessing the quality of an article, and thus helping authors to improve their work. Open Journal System (OJS) is an open-source journal publishing platform created in 2002 by the Public Knowledge Project, headed by John Willinsky. OJS is capable of running the entire journal publishing workflow, starting from the article submissions process, peer reviewing, editing, to publications². In reviewing a submission, OJS provides a way to assess the quality of peer reviewers by means of rating. Each review by peer reviewers will be scored by editors and be given a discrete rating between one and five. Journal publishers will then be able to use this information to selectively keep competent peer reviewers, hence improving the journal's quality¹. However, while some journals provide a basic guideline, no unified standard exists and peer reviewing practices still vary from one scientific journal to another³. Therefore, it's currently still a difficult process to assess a review objectively.

This study proposes a recommendation system for OJS, which automatically estimate the quality of reviews. Specifically, the system will show a summarization of the review and a score estimation of the review, complete with a breakdown analysis of scoring analysis. A summarization of review will be generated using the TextRank algorithm^{4,5} to show editors a quick information regarding the quality of the article. The score estimation itself is generated by using structural features of the review text⁶, adjusted using previously rated peer reviews as the standard. This estimation will be used as a decision support for editors to determine the review's final score. Finally, as more articles and reviews are submitted, journal publishers need a way to efficiently document those information for various purposes, such as the aforementioned peer reviewer selection, journal accreditation, et cetera. While OJS provides several default reporting tools, they aren't comprehensive and several significant information aren't included, such as reviewers' average rating performance. Therefore, new reporting features are also developed to provide an efficient way for OJS users to collect their journals' data. All features developed will then be able to be installed as a plugin application for OJS-based journals.

2. Methodology

The research steps taken in this paper are as follows: requirement gathering through direct observation, interviews, and Focus Group Discussion with the editorial team of Binus Business Review (BBR), an international journal hosted by the Research and Technology Transfer Office (RTTO) of Bina Nusantara University; researching various relevant literatures on the topic of peer reviewing; implementing the solution by developing new functionalities for the OJS; and finally, testing and evaluating the performance. The software development itself applied the Prototyping cycle⁷, which focuses on rapid iteration of prototype development and reviews, which produces a hands-on application, ready to use by the editorial team. The OJS provides support for plugins which allows new features to be easily integrated into the software. Additionally, the plugins can be quickly installed to any OJS-based journals. In this research, development of the new application uses a collection of 50 article reviews, taken from BBR, as the standard used to estimate the review scoring.

2.1. Related Works

While various research attempts have been done to improve the peer reviewing process^{3,8,9} no definitive model exists to assess the quality of a peer review. Ramachandran attempted to solve the problem of automatically assessing review quality using text mining and Natural Language Processing (NLP) to obtain metrics that determine the quality of review. It shows that review relevancy to the topic or field is the most important aspect in assessing the quality of review¹⁰. Xiong¹¹ has developed a helpfulness-guided review summarization, where useful reviews are summarized to help users obtain useful information effectively, based on an automated review helpfulness assessment that takes various textual features into account¹², such as: structural, lexical, syntactic, semantic, meta-data, etc. It shows that the structural feature achieves the highest performance in assessing peer review quality.

This study also uses TextRank to automatically summarize each review. While some successful methods of summarization employ supervised approach^{13,14}, they require large training data and unable to adapt new domains and/or language. TextRank uses unsupervised approach where no training data is required for the algorithm to function, independent of the language used. It is a graph-based ranking model, where text is represented as a graph

Download English Version:

<https://daneshyari.com/en/article/4960498>

Download Persian Version:

<https://daneshyari.com/article/4960498>

[Daneshyari.com](https://daneshyari.com)