Introduction

Software requirement specification (SRS) document is the most crucial document in the software development process. All subsequent steps in software development are influenced by this document. However, issues in requirement, such as ambiguity or incomplete specification may lead to misinterpretation of requirements which consequently, influence the testing activities and higher the risk of time and cost overrun of the project. Finding defects in the initial development phase is crucial since the defect that found late is more expensive than if it was found early. This study describes an automated approach for detecting ambiguous software requirement specification. To this end, we propose the combination of text mining and machine learning. Since the dataset is derived from Malaysian industrial SRS documents, this study only focuses on the Malaysian context. We used text mining for feature extraction and for preparing the training set. Based on this training set, the method 'learns' to detect the ambiguous requirement specification. This study can be considered as an early experimental benchmark; we believe that there some other ways to improve the result and also to extend this work. Thus, this simple survey aims at gathering opinions from the requirement and testing experts on the current achievement of this work and future improvement.

1. Respondent's background

In total, there were 10 respondents. However, only 7 responses were counted due to the completeness of the survey form. Out of 7 respondents, 5 of them are academia and 2 of them are from Industry (see Figure 1). In terms of experience in Requirement Engineering, 2 respondents have less than 5 years of experience and other respondents have at least 6 years of experience (see Figure 2).
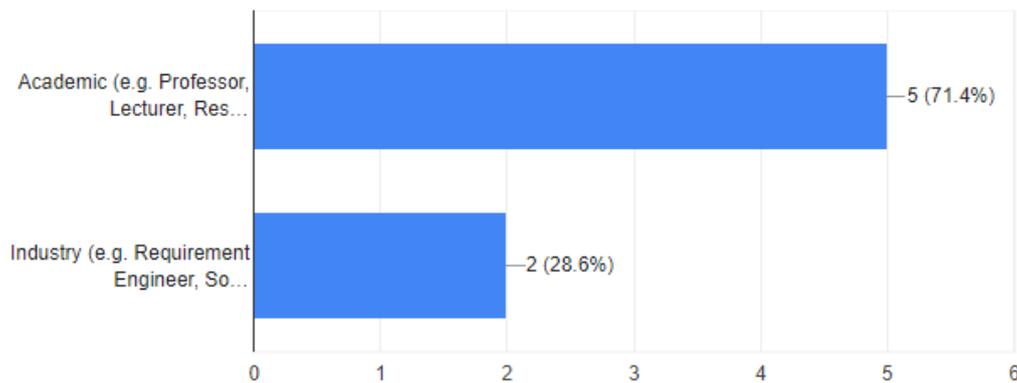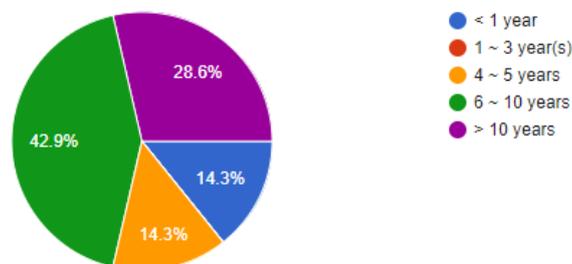

Figure 1: Respondent's Profession

Figure 2: Respondent's Experience in Requirement Engineering

2. Overall Approach

In this section, we summarize the responses regarding the respondents' opinion on our automated approach for detecting ambiguous software requirement specification. 71.4% of the respondents agree that the results of this study may help the requirement engineer to produce a better requirement specification. An interesting reason mentioned by a respondent is that this approach is

useful to be used as a spell checker that would save on inspection cost. However, it also interesting to know that more automation is needed, especially on suggesting on improving the requirement.

Also, in this section, we ask the respondents to rank (1-most important to 6-least important) the importance of quality requirement characteristics. The result shows that verifiable and unambiguous are the most important requirement quality characteristic (see Figure 3).

Rank	Characteristics	Score
1	Verifiable	2.5
2	Unambiguous	3.166666667
3	Complete	3.333333333
4	Consistent	4.5
5	Traceable	5.333333333
6	Feasible	5.666666667

Figure 3: Requirement Quality Characteristics Rank of Importance

3. Ambiguous Words

We asked the respondents to augment the list of ambiguous words that have been listed by ISO 29148, Haron et al. and Berry et al. Most of the respondents mentioned about the word 'should' and 'maybe'. Other mentioned by the respondents are 'if', 'many', 'often', 'quick', 'small', 'large', 'big', 'save', 'secure', and 'fast'.

4. Ambiguous Detection tool

We asked the respondents to give their suggestion on improving the current tool that was presented to them during the workshop. Most of the respondents suggested implementing the suggestion to improve the detected ambiguous requirement and open the tool to other languages such as English. Other suggestions were: (i) add a progress bar and (ii) more visualization.

Conclusions

From the result of this little survey, we can conclude that: (i) verifiable is the quality characteristics that should be our focus in the future; (ii) we need to extend the approach to other languages and (iii) the current approach and the developed tool is more beneficial if it also suggests improvement of detected ambiguous requirement.