

# **Advance Software Engineering**

Course Instructor

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## Question #1:

What would be the sections of the paper? Also, highlight the significance of each section.

If I were to consider on developing a novel approach to requirements engineering, it would contain the basic skeleton of a research paper considering the perspective from a software engineering discipline. Keeping the base paper in mind, the list of sections is mentioned below:

- Abstract
- Introduction
- Background/Review
- Research Question/Solution and Result
- Observations, Discussions, Validation
- Conclusions

At first glance, these headings seem familiar, however each presents discussion to the problem and its solution at hand. Each upcoming section tries to ask the questions which are crucial to be answered in order to present a paper on a novel approach to requirement engineering and for it to be accepted at a publication. Firstly, no major modifications in the **abstract**, which is by default used to grab the reader while providing a synthesis of the paper showing its significance. Also goes over a brief overview of the analysis and evidence in support of the solution [1].

The **introduction** is where the abstract now connects with the body of the paper. To introduce a novel approach to requirements engineering it is imperative, to pinpoint the location of the subject matter, the origin, set the objective of what and how this approach will solve the issue at hand. In this section it is to guide the reader why the need arose, where it arose and what this paper attempts to achieve with the problem now. As the base paper suggests we need to put forth the design and evaluation of the previous approach to Requirement Engineering[1], and how it is overcome by challenges and issues that are needed to be addressed. How we will go about solving this issue and via what means we plan to do so. Just a brief view to what the coming sections are all about.

The **background/review** is where the current approach is discussed and how it came to be. Why was it needed and what it contributed so far to the industry? This will be backed up by literature which will provide as evidence to the

previous research. The effect this section should have is to show the reader in a fluent manner the existent approach.

The **research question/solution and Results** sections should present an accurate description of the current requirements engineering methodology. Now the current model is being analysed and technologies that we have reviewed just above are being criticised. This is where we show how our work will help overcome the current barrier. Why was this specific method chosen for this problem? How does it analyse the question of RE and why this was the best model to test our novel approach on? The appropriate procedure and techniques are illustrated to the reader [1]. The results should now be presented in such a manner that the reader grasps why these results came to be. What the results mean and now why the novel approach is truly the new way to look at requirements engineering.

The **observations, discussions, validation** sections should give a synopsis of the major points presented so far and once again persuade the reader to lean towards your approach of requirements engineering as mentioned in the previous sections. The current sections should carefully objectify the shortcomings as well as what was the successful outcomes that came along with it. What precisely do I contribute by giving a new way to look at Requirement Engineering? How can this approach be scaled, and distributed? [1]

The **conclusion** section is where the entire summary and findings are presented in a comprehensive manner. Re-iterate reasons why the reader should believe in your results [1]. It also shines light to how the novel approach to RE can be further studied and worked upon so that other researchers in this field of study know what to focus their efforts on.

Question #2:

### **How would you evaluate your approach?**

I would provide a solution that is shown to work on a real-life case but is backed up with the empirical statistics of the Requirement Engineering domain. This way enough proof is given with credibility. An extensive knowledge and understanding of the building blocks of Requirement Engineering will needed to be revisited and possibly be renewed in order to justify and properly evaluate my approach to the solution.

### Question #3:

#### **How would you differentiate between research doing real case studies vs studies using academic example?**

I would differentiate real case studies as issues and points of concern that are discussed and analysed in detail. Whereas, studies using academic example would contain carefully conducted experiments. Real Case study deals with the empirical statistics, on the other hand studies using academic tends towards Hypothesis. Real Case study is an in-depth investigation of a particular case but the results they provide are lack of generalization. Studies using academic is the arena whereby the researcher uses certain data collection tools in order to collect, analyze, and interpret the targeted data to generate a pattern. Real Case studies are data driven and end with the generation of a given hypothesis; however, studies using academic can be both exploratory and confirmatory making it possible to either test an already existing hypothesis or generate a new one according to the desired need [2]. Real Case studies method emphasis on solving the problem whereas real case study method emphasis on observing, analyzing and interpreting a particular phenomenon.

### References:

[1] Shaw, Mary. "Writing good software engineering research papers." In 25th International Conference on Software Engineering, 2003. Proceedings., pp. 726-736. IEEE, 2003.

[2] Biria, Reza. (2019). Re: What is the difference between case study and action research?. Retrieved from:

[https://www.researchgate.net/post/what\\_is\\_the\\_difference\\_between\\_case\\_study\\_and\\_action\\_research/5c7fedc911ec73056b061bf0/citation/download](https://www.researchgate.net/post/what_is_the_difference_between_case_study_and_action_research/5c7fedc911ec73056b061bf0/citation/download).