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RE'12 - Industry Paper Track - Paper writing "how-to".
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***Introduction: Below a "how-to" guide in writing papers, with the main focus on industrial papers, is detailed. A paper can take many forms, thus it is impossible to create a guide that covers all possible types of papers. This guide tries to provide/give support to practitioners and others not well versed in paper writing, and should be seen as "help," not a "manual" to follow.
The structure is as follows. Each main section, which is normally present in a paper is detailed, with recommended content parts, and also examples. The length suggestions pertain to 6 – 10 page papers, not "short" papers.

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1. Introduction - The introduction should set the stage for the paper. (typically 0.5 -1 page)
-- Simplified it should include:
1a. Short introduction to the field
1b. Short introduction to the "problem/challenge/issue" that is the focus of the paper
1c. Shortly why this problem (1b) is important and for whom it is important
1d. Shortly what you do/present in the paper, and how it relates to 1b (the contribution)
1e. Disposition of the paper

-- General:
This should be about one page and be a teaser for the reader. Observe, that any statements that need to be properly motivated and referenced as "opinions" are not valid as motivation for research or a problem. In very rare cases, references can be hard to obtain, then the parts in the introduction should be well motivated through arguments (however, this is very seldom the case).

-- Example (below is a simple example of an introduction and its parts as they relate to the parts described and coded above):
*Requirements elicitation [REF] covers a wide area of techniques aimed at catching and extracting requirements from….. (1a)
*Most elicitation techniques, such as interviews, and workshops [REF], are not adapted for off-the-shelf or market-driven (MDRE) scenarios…. In market-driven scenarios [REF], where access to specific stakeholders is hard, there is very little in terms of scientific investigation as to what elicitation techniques yield the best return on investment [REF]…. (1b)
*Elicitation techniques need to evolve to meet the demands of market-driven product development [REF]…. (1c)
*This paper presents an experience report based on two industry projects conducted over a period of one years at DocEngineering Ltd, where several elicitation techniques where used…. (1d)

*The paper is structured as follows (1e)

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2. Background - The background should shortly go through concepts and information that the reader needs to understand the paper and the work presented therein. (typically 0.5 - 1 page)
-- This can include (but does not have to be limited to):
2a. Concepts/Technologies/Methods/etc are introduced as they are needed to understand the paper
2b. Context of the study. This might include, e.g., company and project descriptions.

-- General:
Regarding 2a, you do not have to go through basics, e.g., what is requirements engineering, the venue of the paper gives you the possibility to make some assumptions in relation to the readers' knowledge.
Regarding 2b, Avoid being generic, that is try to be as specific as possible. Having a generic company description is not as good as having a specific description of, e.g., the products being developed, number of developers involved, person hours, etc. This contextual description has to be a balance between being as detailed as possible, while maintaining confidentiality as needed. The general rule is, "the more details the better," as it lets the reader understand the context of the study.
OBSERVE, sometimes the Background section and the Related Work section are combined, this can be fine, but the contents of that combined section can be deducted from the description here in any case.

-- Example (extending on the example from 1 above):
*In a market-driven context, customer Focus Groups [REF] and Personas [REF] are two methods that usually…. Each is described below… (2a)
*The study presented in this paper is based on a one year study of two products at DocEngineering. DocEngineering is a….. In Project 1 had 120 developers involved…. A total of 15000 person hours was…. The initial SRS was constructed using… which involved four requirements engineers and three analysts working…. (2b)

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3. Related Work - Should cover what others have done in the field/area, and how the work presented in this paper adds/confirms/disproves/extends/etc. related work (typically 0.5 to 1 page).
-- This can include (but does not have to be limited to):
3a. What others have done/presented in relation to the overall research area.
3b. What others have done specifically in relation to what you present in the paper.
3c. (can include) Related work in relation to the research method you apply in the study/paper.

-- General:
Regarding 3a, the area in our running example is RE and Elicitation in a MDRE

context. What have others done in this area as pertaining to RE+Elicitation+MDRE, also can you find others confirming the "problems" you describe?
Regarding 3b, in our running example, what others have done in relation to using Personas and Focus Groups…

-- Example:
*Gorschek et al. [REF] report that elicitation in an MDRE context presents new problems…. This is confirmed by several studies [REF, REF, REF]. Several industry experience reports present the possibility of using internal sources, such as product managers, as representatives for large customer groups… [REF]…. However, there are very few studies reporting…., which is the main focus on the study presented in this paper…. (3a)
*The use of personas has shown promise and Humangus and David [REF] report on a successful….. However, there are problems of scalability and keeping personas up to [REF], a problem that we tried to tackle as described in this paper…. (3a + 3b)

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4. Research Methodology - Should cover the setup/design and operation/execution of your study (typically 0.5-1 page)
-- This can include (but does not have to be limited to):
4a. Design - how was the study designed?
4b. Operation - how was the study executed and what happened during operation that differs from the design (4a)?
4c. Instrumentation (here applicable) - what tools where used for the operation?
4d. Research questions/hypothesis (where terms used should be defined, example: usability, efficiency, etc. needs to be defined)

-- General:
It is central that there be a short, but adequate, methodology section in any paper as it explains HOW the research was planned and executed. Sometimes, in industrial experience reports, the HOW has to be a matter of reverse engineering as the study was not designed before the study. This is normal, however, the research methodology section should still be detailed to explain how the study was performed, and it should be as detailed as possible.
As an example, the disposition of this section can be:
4. Research Methodology
4.1 Research Questions
4.1.1 Definitions
4.2 Research Design and Operation
4.3. Validity Evaluation
The research methodology section will differ a lot depending on what type of study was conducted. A formal experiment will be much more detailed than, e.g., an interview study, however, all studies should be described as rigidly as possible.

-- Example 1 (from running example):
*In relation to Efficiency and Effectiveness, how do the methods of Personas and Focus Groups work….

*RQ1: How Efficient and effective is Personas in relation to Focus groups as it relates to requirements elicitation in a MDRE context?
*RQ2: How do RE experts judge the ease-of-use of respective methods?
*This paper utilizes case study research…. specifically, the use of the elicitation methods is evaluated through testing the Efficiency and Effectiveness of each method separately….. both are defined below.
*A total of 20 practitioners participated in the study, they are characterized below in Table X….
*Efficiency is defined as…. [REF] and….
*For the purpose of measuring efficiency we used a questionnaire to…. the subjects logged time spent…. and this was…. the questionnaire can be downloaded from (weblink)

Example 2 (not from running example):
*As we present experiences from using Tool Zebra, we used automated measurements to…. we measure X through… and Z through…
*The measurements are then compared to a manual process proceeding Zebra… and….

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5. Results and Analysis - Should present the results and your analysis of them (as many pages as you have room for)
-- This can include (but is not limited to):
5a. RAW results
5b. Analysis points
5c. Answer your research questions

-- General:
It is possible to separate this section into a "Results Section", and an "Analysis Section" although this is not necessary as long as you keep a couple of things in mind. The results presented should be the ones needed for you to do appropriate analysis and ultimately draw your conclusions. That is, there can be no analysis or subsequent conclusions, that aren't based on the results presented in the paper. Example of RAW results is a table showing measurements, or a figure showing groupings and so on. In case you use statistics and test significance, details in relation to what data you use as input to the test, what test you use, assumptions required by the statistical method used, etc. need to be present.

-- Example (from running example):
*As can be seen in Table 5, the 20 subjects indicated their work effort in hours. The average is 49hours and the median is 33hours. (5a) The difference in average and median might indicate…. (5b)
*Based on the weighed estimations on requirements coverage, presented in Table 9, also see overview in Figure 4, we can use a non-parametric test to confirm that…. we can however not show with any statistical significance that….
*Part II of the questionnaire used for logging of time spent we had a number of open questions (see Section 4) to get the opinions in relation to lessons learned. These

are summarized below where each subsection denotes major pros and cons of each method…. the traceability between pros and cons to each subject can be seen in Table 11 below….

*As indicated by the results Personas is effective, however the efficacy is…. This is confirmed by Gorschek et al. [REF] which applied personas in…. however, there seems to be an increase in productivity as…..

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6. Conclusions - The overall conclusions of the paper based on the Results and Analysis (Section 5) (typically 0.5 - 1 page)
-- This can include (but is not limited to):
6a. Short summary of what you did
6b. Short summary of your results
6c. Most important conclusions that you can draw based on your results and analysis (observe, no conclusions can be drawn if they are not supported in Section 5)

-- General:
The conclusions can be seen as a crisp summary of the paper, where the most relevant and important points are highlighted. Now new data/results/analysis should be introduced here, rather the conclusions are a "summary" of sorts of all the results and analysis presented earlier in the paper. An exception to this "rule" is that you can be allowed to do some deduction and "thinking" in the conclusions, however, it should be in relation to the possible conclusions which have to be based on the results and analysis.

-- Example:
*This paper presented a….
*The results show that both Personas and Focus Groups can be powerful methods for the elicitation of requirements in….. However, it should be noted that Personas….. This can be seen as surprising, and can have several possible explanations…..
*Answering RQ1…..

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7. Future Work (as appropriate)

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8. References - This is the reference list of the paper.
The overall point of a well formatted reference list is for readers to be able to find the papers/books/etc you base your work on. Thus it is important that:
8a. All references should be formatted according to the standard demanded by the venue.
8b. All references should be complete (watch out for missing page numbers, years, names of conferences/journals, etc.)
8c. A general tip is that peer-reviewed references should be in a very clear majority.

Non-peer-reviewed references (web pages, books, technical reports, eEtc.) can be ok, but only as help or reference material. If you base a statement that is important for your paper on a reference, the reference should be peer- reviewed. Peer-reviewed entails that the paper you reference should be published (and thus peer-reviewed) in a scientific Journal, Conference, or Workshop.

8d. It is good if your references are as fresh (in terms of when they were published) as possible. This is not to say that older references are not relevant or can not be used, rather that if you say that, e.g., X is important, and you use a reference from 1970, it looks a little weird. As reader might deduct that i) the problem is not a problem any more, or, ii) the problem was stated in 1970 but has not been solved yet, and chances are there are newer more recent references.

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GENERAL TIPS:

1. Items not fitting in the paper (but important) can be put on official web sites with permanent links. For example, a questionnaire, or raw results, that are important for the paper, but don't/cant fit in the paper can be put up and linked to the paper (footnote and/or references). Important here is that the web page is official, and permanent (10y).