

Literaturrecherche für das Seminar "Software Qualität" im SS2014

Henning Femmer und Benedikt Hauptmann

Unter Verwendung von Material von *Dr. Florian Deißenböck* und *Prof. Dr. Stefan Wagner*



Lernziele und Inhalte

- 1. Strategie: Wissenschaftliche Arbeiten in einem Themengebiet suchen
- 2. Ein spezielles Papier suchen und pdf bekommen können
- 3. Grobe Qualitätsidee

Zwei Teile:

- 1. Einführung zu wissenschaftlichen Veröffentlichungen
- 2. Literaturrecherche hands-on



Wissenschaftliche Veröffentlichungen

(eine kleine Einführung)



Was und wie wird veröffentlicht?

- Monografie/Buch
 - meist ein Autor
 - 100 1000 Seiten
- Buchkapitel
 - 20 50 Seiten
- Journal-Artikel
 - 10 30 Seiten
- Proceedings-Artikel (Konferenz)
 - 3 15 Seiten
- Workshop-Artikel
 - 3 15 Seiten
- Technische Berichte
- Promotionen (Masterarbeiten/Bachelorarbeiten)
- Blogs
- ...





Proceedings-Artikel

Monografie

ПП

Conference on Systems Engineering Research (CSER'13) Eds.: C.J.J. Paredis, C. Bishop, D. Bodner, Georgia Institute of Technology, Atlanta, GA, March 19-22, 2013.

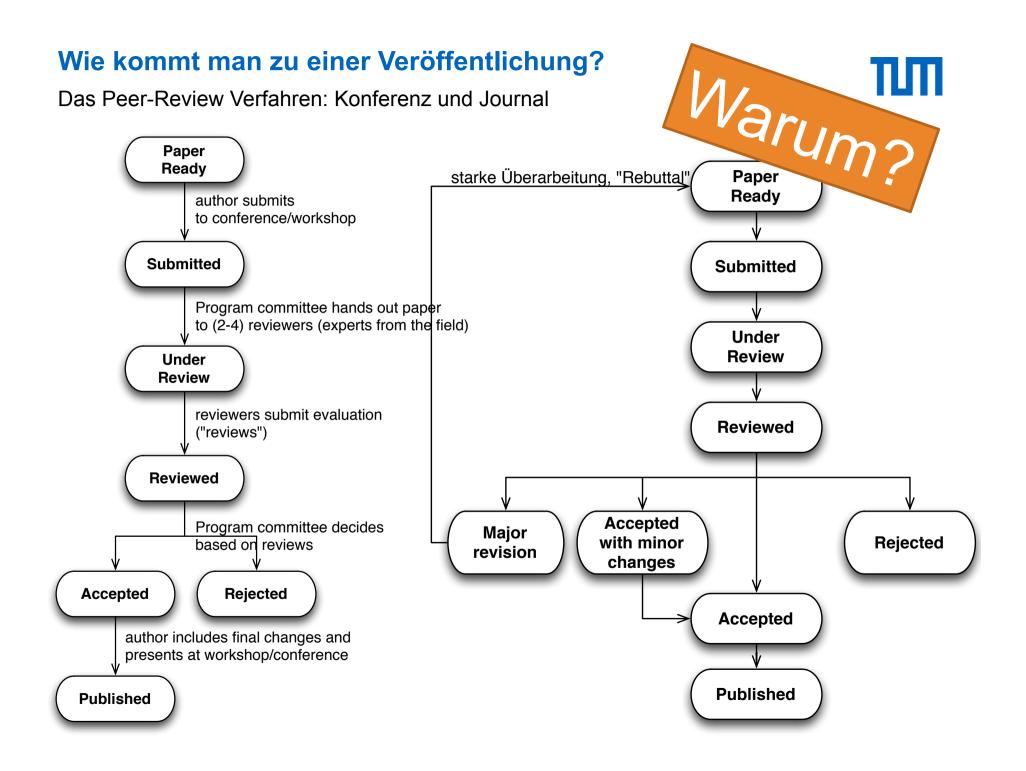
A Literature Survey on International Standards for Systems Requirements Engineering

Florian Schneider^a*, Brian Berenbach^b

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• Jackpot für die Literaturrecherche: Meta-Publikationen / Research Survey

[1] R. Wieringa, N. Maiden, N. Mead, and C. Rolland, "Requirements engineering paper classification and evaluation criteria: a proposal and a discussion," Requir. Eng., 2005.



Beispiel: Reviews für einen Workshop



Reale Beispiele...

------ REVIEW 2 ------

PAPER: 4 TITLE: Who is the Advocate? Stakeholders for Sustainability AUTHORS: Birgit Penzenstadler, Henning Femmer and Debra Richardson

----- REVIEW ------

The paper attempts to devise a systematic process for identifying advocates of sustainability. The process leverages on well-established/classical requirements engineering processes for stakeholders identification.

- + The paper is well-written and presented. The examples are useful.
- + The use of the requirements techniques to identifying sustainability stakeholders looks to be plausible.

- Combining/contrasting the outcomes the four techniques look to be an expensive exercise. Furthermore, sustainability analysis may also require the identification of an equally important slice of stakeholders, who are the devils' advocates for sustainability. This could be important for promoting behavioral change, analyzing obstacles for the sustainability agenda, understanding their incentives, quantifying the risks to adoption and working on solutions for promoting acceptance.

- I would also expect more justification of the exercise in terms of long term benefits and influences on various software artifacts. The motivation is bit weak to justify the effort.

RE ^V PAPER: 8	VIEW 1	= Overall opinion =	
TITLE: Detecting Inco	onsistencies in Wrappers - A Case Study Femmer, Dharmalingam Ganesan, Mika		contained paper that answers
	= Detailed feedback =		ck and provides both detailed
REVIEW = Paper overview =	- abstract - typo: "instead of to the" ->	g theory and insightful	
The paper addresses	- p2 - typo: "an SAL" -> "a SAL"		
The paper addresses in software abstractio underlying implement	- p3 - typo: "an analysts" -> "an analys	easant to read, with s clearly stated ints, assumptions and	
T 1 11	- p3: "The tool detects differences in the function pair and		commented,
The authors propose equivalence of severa	highlights the important ones to the u	ail, with very	
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The methodology is to code composed of 10		le target language is	
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p1 |58

4 dimensions vs. views

Beispie

Reale Bei

Btw., why is the technical dimension important? For me it is simply a subset of the economic 'dimension'. Keeping a system sustainable from a technical perspective makes it more profitable from the economic point of view. If it is not 'technically sustainable', it is also not in the economically way.

Reviewer: 1 p1 | 44 example of green software code are mobile apps Recommendation Why are they green?

Comments:

#

First some genera pa Sorry to be hard c co not want to demot ? To me, it looks to | ?categories to class I wound it confusi H I would evaluate if Second might be my fault I. Your aim is to re pa Mine, too, I consic W Therefore, the cor G When I think back paper. Then I rem the contribution of ----Sidebar section

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One more genera Is green software I have the feeling onough knowledg

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o2 I10 What is the GSW?	detailed notes"	y? How does it help to account for this in

I think the sentence should be reformulated to avoid misunderstandings.

Sec 2 Related Work and its Quality

p2 |22

Attention in SW Engineering only recently.

- depends on whether SW E is something different than the production of software

SW that is now classifyed as greening (Green by) has been produced since many years in environmental sciences, and there has been environmental informatics for a while. There is the conference series of EnviroInfo (Environmental Informatics) (27th this year). I had a lectures how to design environmental software in 1994. Early (german) names are e.g. R Grützner, B Page, V. Wohlgemuth. At least since 2003 there is a Journal on Environmental Informatics (methodologies, applications, and policy considerations, the needs for environmental systems analysis, the challenges of environmental systems modeling, and the impacts of environmental informatics are discussed etc., btw., IF 3.619, not that I like Impact Factors).



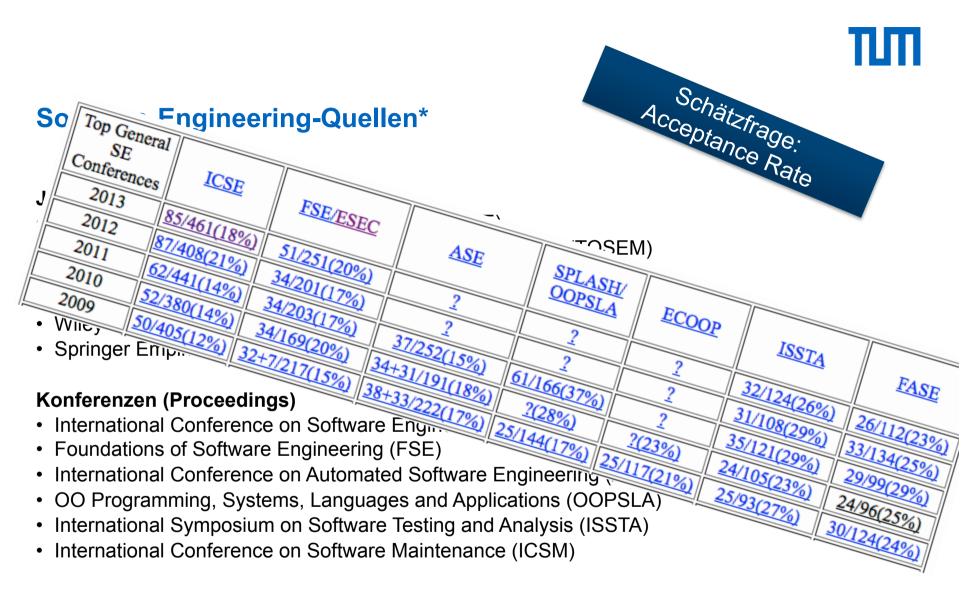
Wie ist die Qualität einer wissenschaftlichen Publikation?

Qualität einer wissenschaftlichen Publikation lässt sich unterteilen in:

- Relevance
- Novelty
- Validity
- Rigor
-

Was man schneller bewerten kann:

- Peer-reviewed?
- Anzahl der Zitationen
- Qualität der Venues/Journale:
 - Impact factor
 - Acceptance rate



http://web.engr.illinois.edu/~taoxie/seconferences.htm

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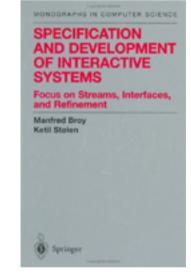


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 - Peer-Review
- Proceedings-Artikel (Konferenz)
 - Peer-Review
- Workshop-Artikel
 - Peer-Review
- Technische Berichte (Tech Reports)
 - KEIN Peer-Review
- Internetseiten/Blogs
 - KEIN Peer-Review

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Proceedings-Artikel



Monografie



Hands-on: Suche nach Publikationen



Warum Literaturrecherche?

 Kein Selbstzweck, sondern Teil des Jobs! Warum?

Ziele der Literaturrecherche:

- Stand der Wissenschaft herausfinden, (aktuelle Fragen bestimmen)
- Relevanz belegen

• ...

- Abgrenzung zu anderen Arbeiten (inklusive Begründung)
- Einordnung in Forschungegebiet
- Behauptungen über Common Knowledge belegen können



ПП

Wo finde ich Papiere?

Quellen:

- ACM Digital Library
- IEEE Xplore
- Springer Link
- Elsevier
- · Lehrstuhl/Mitarbeiterseiten
- scholar.google.com
- · Bibliothek ...

Wir verwenden meistens Google Scholar!

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 - Alle Ergebnisse zusammengefasst
 - Zitationen direkt angezeigt
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 - Kein Qualitätsfilter
 - Schlechte Suchfilteroptionen

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MSc. with honours

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NEWS

- Are you a master Then this might t
- Consider submitt
 RE Conference!

Fields of interest

- Requirements Er
 Sustainable Soft
- Sustainable Sol
 Empirical Softw
- Agile Software E
- Aglie Software

Teaching

● SS 14 <u>○ Teaching</u>



Rapid Requirements Checks with Requirements Smells: Two Case Studies Henning Femmer, Daniel Mendez Fernandez, Elmar Juergens, Michael Klose, Ilona Zimmer, 2014 1st International Workshop on Rapid and Continous Software Engineering (RCoSE at K

- In Quest for Requirements Engineering Oracles: Dependent Variables and Measurement Daniel Méndez Fernández, Jakob Mund, Henning Femmer and Antonio Vetro' 2014 18th International Conference on Evaluation and Assessment in Software Engineering (
- Systematic Mapping Study on Software Engineering for Sustainability (SE4S)
 Birgit Penzenstadler, Ankita Raturi, Debra Richardson, Coral Calero, Henning Femmer and X 2014 18th International Conference on Evaluation and Assessment in Software Engineering (
- <u>Reviewing Natural Language Requirements with Requirements Smells A Research Pr</u> Henning Femmer

2013 11th International Doctoral Symposium on Empirical Software Engineering (IDoESE'13

<u>RE@21: Time to Sustain!</u>

 Direct Descented last Lighting Form

Birgit Penzenstadler, Henning Femmer 2013 Second International Workshop on Requirements Engineering for Sustainable Systems

- Detecting Inconsistencies in Wrappers: A Case Study Henning Femmer, Dharmalingam Ganesan, Mikael Lindvall, David McComas 2013 35th International Conference on Software Engineering (ICSE'13), Track: Software Engi
- Who Is the Advocate? Stakeholders for Sustainability Birgit Penzenstadler, Henning Femmer, Debra Richardson 2013 2nd International Workshop on Green and Sustainable Software (GREENS at ICSE'13)
- A Generic Model for Sustainability with Process- and Product-specific Instances
 Birgit Penzenstadler, Henning Femmer
 2013 1st Intl. Workshop on Green In Software Engineering, Green By Software Engineering (



Ich kenne ein Papier und suche das pdf-File...

Zwei Optionen:

- <u>https://EACCESS.ub.tum.de</u> und nach den Zeitschriften suchen
- Proxy-Server einrichten

Details stehen hier:

https://www.lrz.de/services/netzdienste/proxy/zeitschriftenzugang/

DEMO-Time



Suchverfahren und -strategien

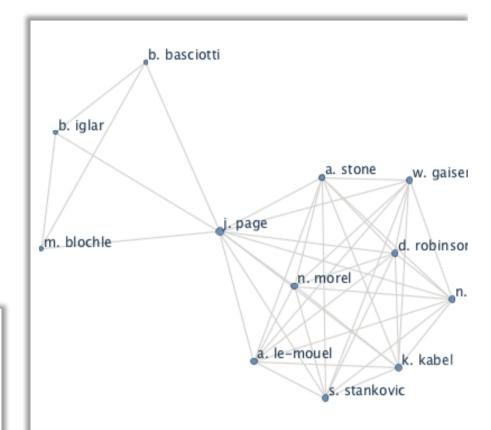
- Manuelle Suche über die Suchmaschinen
- (Literatur-) Snowballing

Systematisches Vorgehen (formal):

- Systematic Mapping Studies
- Systematic Literature Reviews

REFERENCES

- [1] B. Hauptmann, M. Junker, S. Eder, E. Juergens, and R. Vaas, "Can Clone Detection Support Test Comprehension?" in *ICPC'12*, 2012.
- [2] M. Fowler and K. Beck, *Refactoring: improving the design of existing code*. Addison-Wesley, 1999.
- [3] A. van Deursen, L. Moonen, A. van den Bergh, and G. Kok, "Refactoring Test Code," in *XP'01*, 2001.
- [4] G. Meszaros, S. Smith, and J. Andrea, "The test automation manifesto," in *XP'03*, 2003.
- [5] G. Meszaros, xUnit Test Patterns: Refactoring Test Code. Addison-Wesley, 2007.
- [6] M. Abbes, F. Khomh, Y.-G. Gue andhe andneuc, and G. Antoniol, "An empirical study of the impact of two antipatterns, blob and spaghetti code, on program comprehension," in *CSMR'11*, 2011.
- [7] F. Khomh, M. Di Penta, and Y.-G. Gueheneuc, "An exploratory study of the impact of code smells on software change-proneness," in *WCRE'09*, 2009.
 [8] A grant Dependent M. Leon. "The solder store provided displayed by the solution of the sol



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Papierverwaltung

• BibTeX (+LaTeX)

- bewährtes, universelles Format für LaTeX-Nutzer
- wird auf vielen Literaturrecherche-Webseiten angeboten
- wichtig: Verwendung der richtigen Typen: @article, ...

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 - verwendet BibTeX als natives Datenformat
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 - Dynamische Gruppen
- Mendeley

• ...

- "moderner"
- Kooperative Verwaltung
- Verwaltung von Notizen
- Papers (Mac only)



MENDELEY



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- 1. Strategie: Wissenschaftliche Arbeiten in einem Themengebiet suchen
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- 2. Literaturrecherche hands-on



Nachlese

- B. Kitchenham and S. Charters, "Guidelines for performing Systematic Literature Reviews in Software Engineering," 2007.
- S. Keshav, "How to Read a Paper", 2013 <u>http://blizzard.cs.uwaterloo.ca/keshav/home/Papers/data/07/paper-reading.pdf</u>
- Kent Beck: How to get a paper accepted at OOPSLA: <u>http://plg.uwaterloo.ca/~migod/research/beckOOPSLA.html</u>
- A. Zeller and T. Zimmermann, "Failure is a Four-Letter Word A Parody in Empirical Research"

and the corresponding presentation:

https://www.youtube.com/watch?v=NM3CIIbuVoM

- Zugang zu Wissenschaftlichen Publikationen für Mitarbeiter und Studierende der TUM https://www.lrz.de/services/netzdienste/proxy/zeitschriftenzugang/
- Paper-Verwaltung: <u>http://www.mendeley.com</u> <u>http://jabref.sourceforge.net</u>

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