KP Softwaretechnologie

Systematic Literature Review Toolkit

DRESDEN concept
Exzellenz aus Wissenschaft und Kultur

Systematic Literature Reviews

- ***Goal***: get an overview of a selected research area
  - Identify relevant literature
  - Organize literature (determining classes)
  - Classify literature
  - Analysis to identify „open spots“

SLR Workflow

- Set topic (e.g., „building information modelling“)
- Read into topic, to identify characteristic keywords
  - E.g., „integrated project delivery“, „lean construction“, „BIM collaboration format“
- Specify in- and exclusion criteria
  - E.g., exclude non-english literature
- Use keywords to search standard libraries
  - GoogleScholar, IEEE Xplorer, DBLP, ACM DL, SpringerLink, SCOPUS, …
- Often, you‘ll get a very high number of papers (#initial)
  - Apply in-/exclusion criteria (#filtered)
- Extend #filtered list by for- and backward snowballing
  - Look for papers cited by those found by you (forward)
  - Look for papers, which cite the papers you found (backward)
- Now you have a literature corpus

SLR Workflow

- While reading the literature corpus, identify classes and build a taxonomy
- Classify all papers using this taxonomy
- Compare the classes with each other to find „open spots“

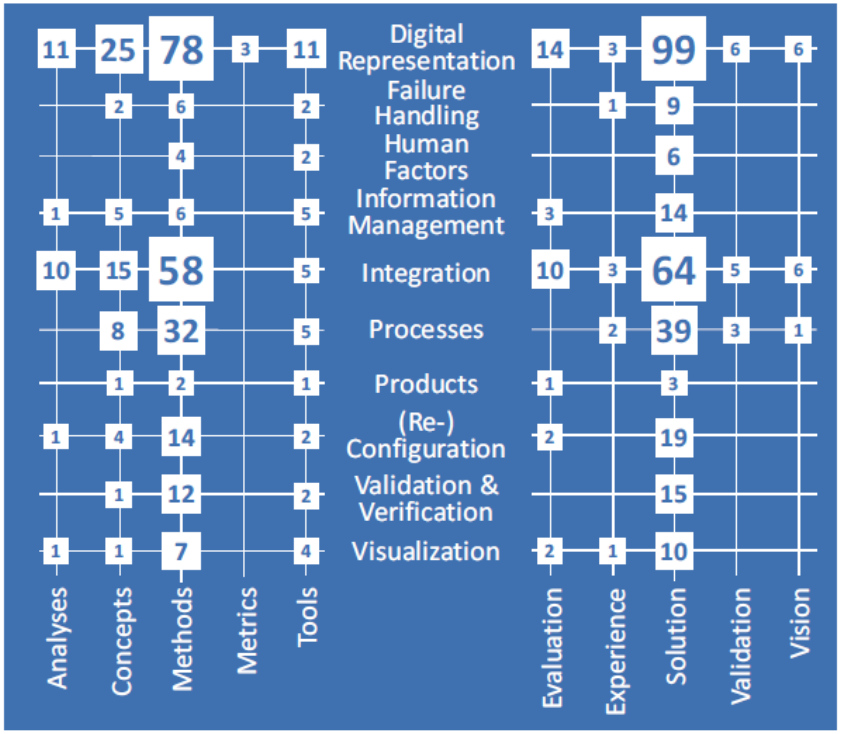


Fig. 2. Industry 4.0 concerns by research type and contribution type.

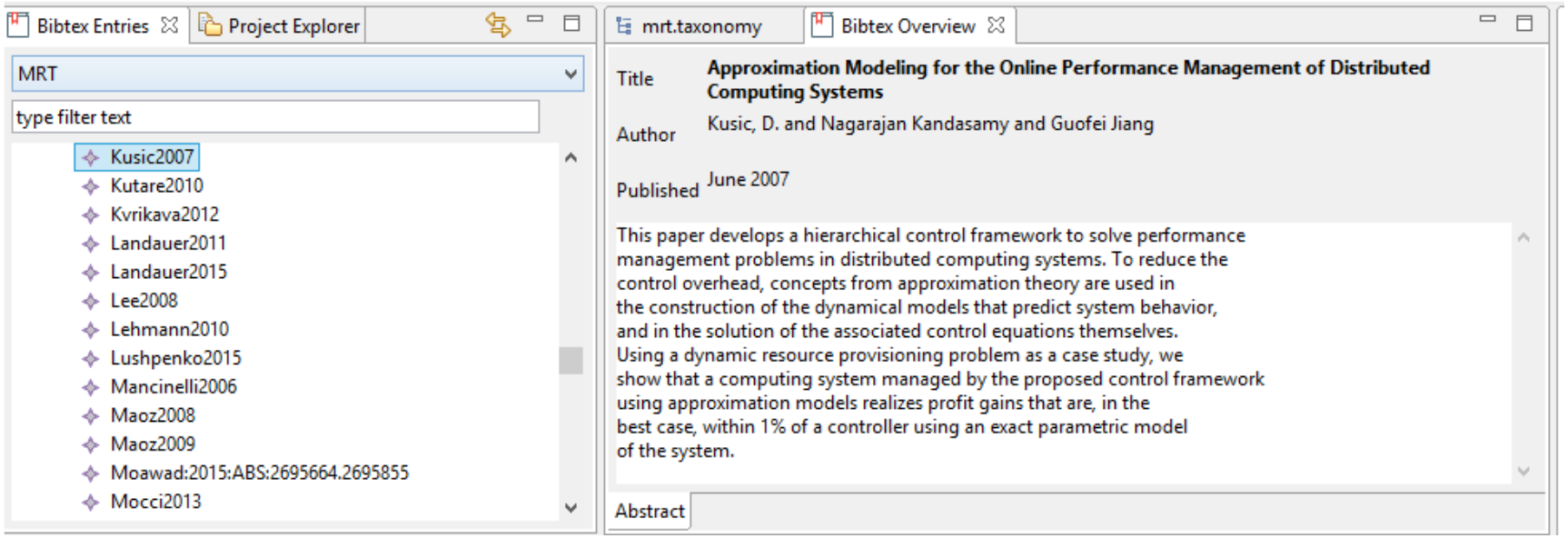
Andreas Wortmann, Benoit Combemale, Olivier Barais: A Systematic Mapping Study on Modeling for Industry 4.0. In: Proceedings of 2017 ACM/IEEE 20th International Conference on Model Driven Engineering Languages and Systems.

SLR Toolkit

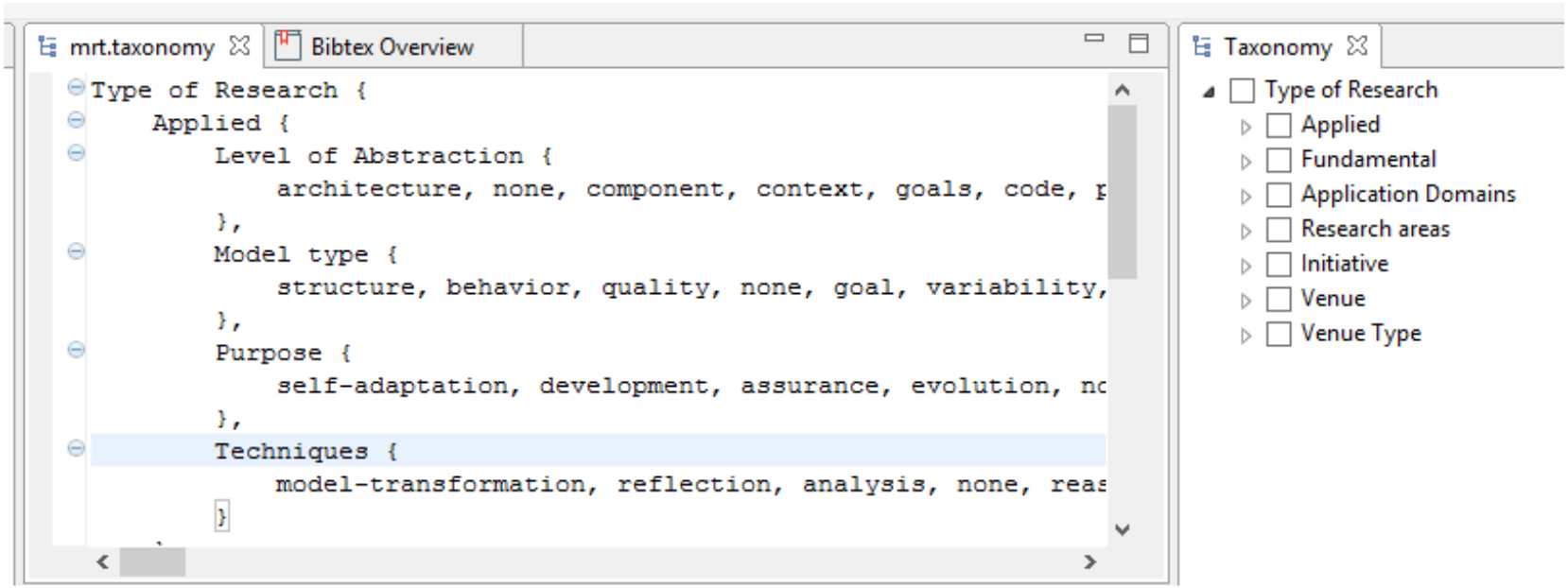
- Open Source Project mainly implemented by students
  - https://github.com/sebastiangoetz/slr-toolkit/

- Supports the full process required for a systematic literature review
  - Searching literature (GoogleScholar Plugin)
    - Or: Importing Bibtex Files
  - Filtering
  - Creating a taxonomy
  - Classifying Literature
  - Analysis in terms of Graphs
  - Refactorings
  - Mendeley Integration

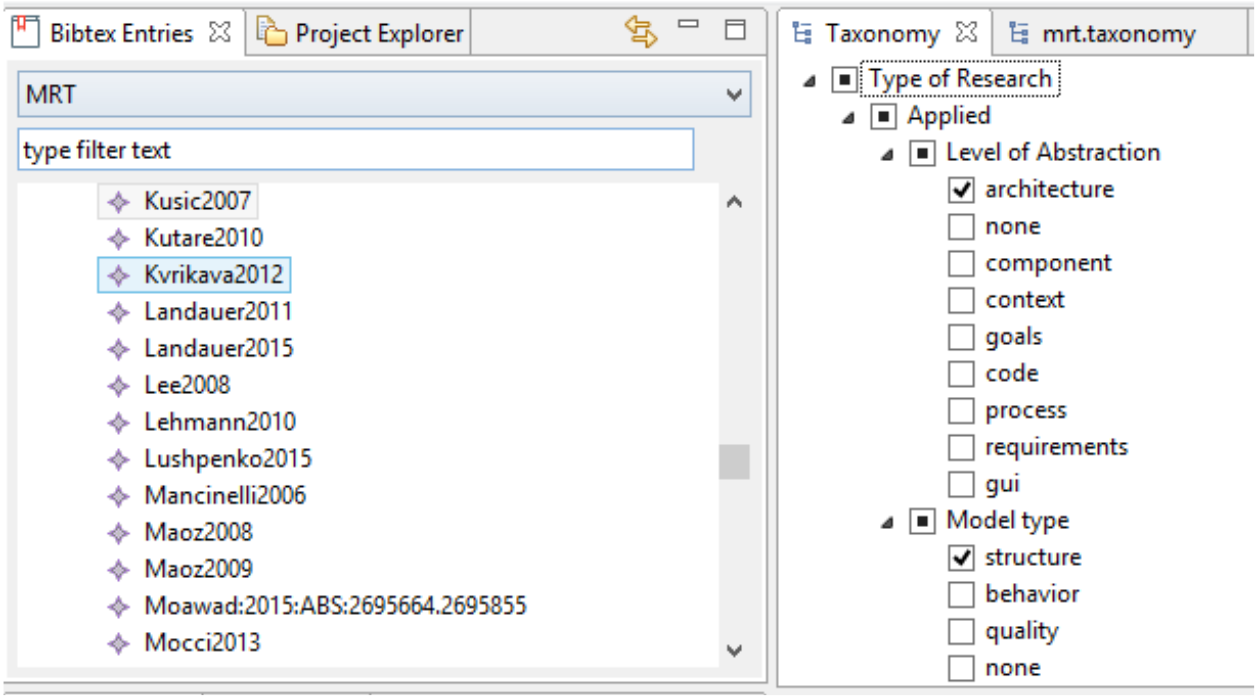
Filtering


Bibtex Entries
Project Explorer
MRT
type filter text
Kusic2007
Kutare2010
Kvrikava2012
Landauer2011
Landauer2015
Lee2008
Lehmann2010
Lushpenko2015
Mancinelli2006
Maoz2008
Maoz2009
Moawad:2015:ABS:2695664.2695855
Mocci2013
mrt.taxonomy
Bibtex Overview
Title
Approximation Modeling for the Online Performance Management of Distributed Computing Systems
Author
Kusic, D. and Nagarajan Kandasamy and Guofei Jiang
Published
June 2007
This paper develops a hierarchical control framework to solve performance management problems in distributed computing systems. To reduce the control overhead, concepts from approximation theory are used in the construction of the dynamical models that predict system behavior, and in the solution of the associated control equations themselves. Using a dynamic resource provisioning problem as a case study, we show that a computing system managed by the proposed control framework using approximation models realizes profit gains that are, in the best case, within 1% of a controller using an exact parametric model of the system.
Abstract

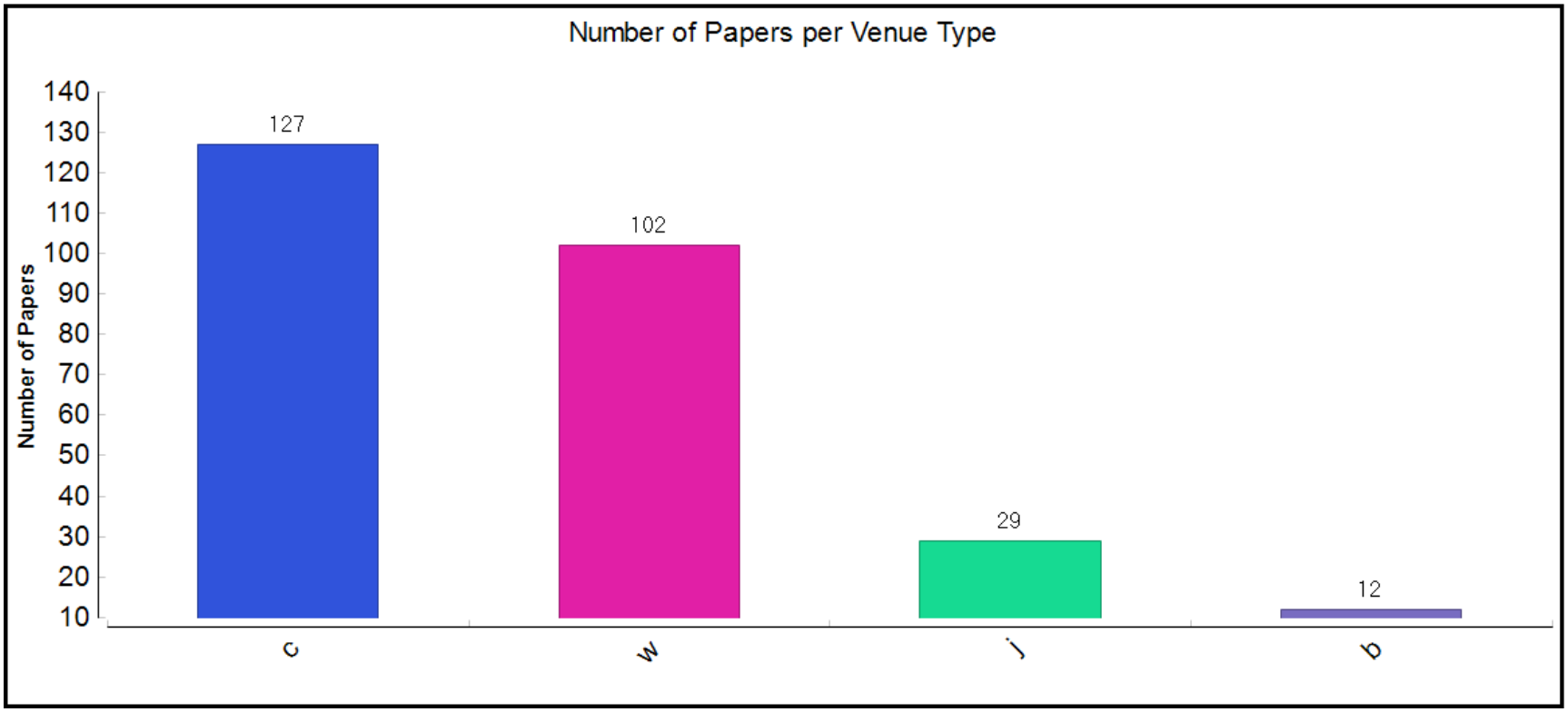
Specifying a Taxonomy



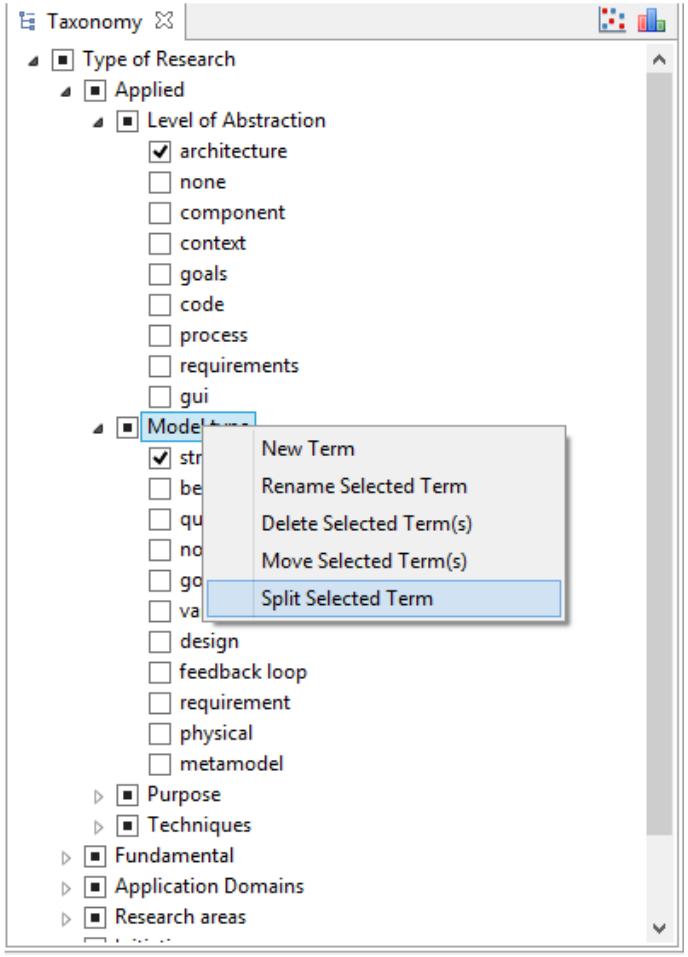
Classifying Literature



Analysis


Number of Papers per Venue Type
Number of Papers
140
130
120
110
100
90
80
70
60
50
40
30
20
10
127
102
29
12
c
w
j
b

Refactorings



Build Process

- Build Process based on Maven, Tycho and Eclipse PDE
- Continous Delivery using Travis CI

README.md

gitter join chat | issues 28 open | license EPL | build passing

slr-toolkit

A Toolkit for Systematic Literature Reviews

Releases

Latest release: here

Latest release

0.2.0

64330e9

SLR-Toolkit 0.2.0

sebastiangoetz released this 13 days ago · 1 commit to master since this release

Assets

- slr-toolkit.201803291034-linux.gtk.x86.tar.gz
- slr-toolkit.201803291034-linux.gtk.x86_64.tar.gz
- slr-toolkit.201803291034-macosx.cocoa.x86_64.tar.gz
- slr-toolkit.201803291034-win32.win32.x86.zip
- slr-toolkit.201803291034-win32.win32.x86_64.zip
- Source code (zip)
- Source code (tar.gz)

This new release integrates Mendeley Synchronisation Support for SLR Toolkit.

What's left todo?

- SLR Project Metadata and Latex Export
  - Provide a way to add metadata to an SLR Project
  - Provide a view with key statistics of the Project
  - Enable the export of half-filled Latex papers
- New charting engine
  - Eclipse BIRT is currently used, but seems to be no longer under active development
  - An alternative is to be searched and the existing features should be reimplemented
- Bibtex Tooling
  - Merging and Splitting Bibtex Files
  - Symmetric Difference and Relative Complement
  - Showing Metrics for Bibtex Files (number of entries, per type, etc.)
  - Auto-Filtering of Bibtex Entries (e.g., based on publisher)
  - Etc.
- Improved Taxonomy Editing and Refactoring
  - Taxonomy should be editable directly in the tree-view
  - Changes should be interpreted as refactorings automatically
- Updating the Build Environment (Tycho)
- More ideas welcome