

Open Source Search Index for distributed OER Repositories in Germany

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Background

- In recent years, numerous OER portals have been launched or planned in federal states of Germany

Examples:

- [twillo](#), Lower Saxony
- [ORCA.nrw](#), North Rhine-Westphalia (in development)
- [ZOERR](#), Baden-Wuerttemberg
- National working group for OER repositories
- Need for central search option for teachers and learners

What is the OERSI?

- The Open Educational Resources Search Index (OERSI) is a central entry point for OER search in higher education via distributed heterogeneous sources
- Reusable Open Source Software
- Web: <https://oersi.de>
- Target group:
 - end users (teachers, learners)
 - service provider (repository operators, LMS operators)

User Interface

OERSI Open Educational Resources Search Index

Search... Deutsch

269 results found

LANGUAGE: GERMAN X PROVIDER: TWILLO X CLEAR FILTERS

Subject ▾
Type ▾
License ▾
Author ▾
Organization ▾
Language ▾
Provider ▾

Erneuerbare-Energien-Szenarien in der Lehr...

Vollständige Materialien zur Vorbereitung eigener Workshops zum Erstellen von Energieszenarien für Deutschland 2050 aus 100%...
Agrar-, Forst- und...
Other

CC BY SHOW DETAILS

Daten Lesen Lernen Interview 2

Warum brauchen wir Data Literacy? Studierende der Uni Göttingen antworten.

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Daten Lesen Lernen Interview 3

Warum brauchen wir Data Literacy? Studierende der Uni Göttingen antworten.

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Type ▾

- Video 23021
- Undefined 668
- Course 233
- Image 176
- Other 115
- Worksheet 105
- Presentation 70
- Reference Work 25

Language ▾

- English 12000
- German 6284
- Undefined 6114
- Spanish 88
- French 37
- Chinese 14
- Flemish 7
- Hungarian 2

Programming Interface

```
acka47@homo:~$ curl -s https://oersi.de/resources/aHR0cHM6Ly9iYWluLmZlbi4bG9obWVpZXluZGU=?format=json | jq
{
  "mainEntityOfPage": [
    {
      "dateCreated": "2020-04-15",
      "id": "https://www.tullo.de/edu-sharing/components/render/8aaa28cd-750e-4cae-b77d-e06b887c7ae5",
      "dateModified": "2020-05-25",
      "provider": {
        "name": "tullo",
        "id": "https://oerworldmap.org/resource/urn:suid:51277c08-c944-4204-aeaf-10ee66df93ce",
        "type": "Service"
      }
    }
  ],
  "license": "https://creativecommons.org/licenses/by/4.0",
  "description": "Skript zum Kurs Bibliotheks- und Archivinformatik an der FH Graubünden in Frühlingsemester 2020",
  "keywords": [
    "Bibliothek",
    "Archiv"
  ],
  "id": "https://bain.felixlohmeier.de",
  "inLanguage": [
    "de"
  ],
  "about": [
    {
      "prefLabel": {
        "de": "Bibliothekswissenschaft, Dokumentation"
      },
      "id": "https://w3id.org/kim/hoerschulfaechersystematik/n06"
    }
  ],
  "@context": [
    "https://w3id.org/kim/iri-profile/draft/context.jsonld",
    {
      "@language": "de"
    }
  ],
  "name": "Bibliotheks- und Archivinformatik FS2020",
  "type": [
    "LearningResource"
  ],
  "image": "https://www.tullo.de/edu-sharing/preview?nodeId=8aaa28cd-750e-4cae-b77d-e06b887c7ae5&storeProtocol=workspace&storeId=SpacesStore&dontCache=1624229677861",
  "creator": [
    {
      "name": "Felix Lohmeier",
      "type": "Person"
    }
  ],
  "learningResourceType": [
    {
      "prefLabel": {
```

<https://oersi.de/resources/aHR0cHM6Ly9iYWluLmZlbi4bG9obWVpZXluZGU=?format=json>

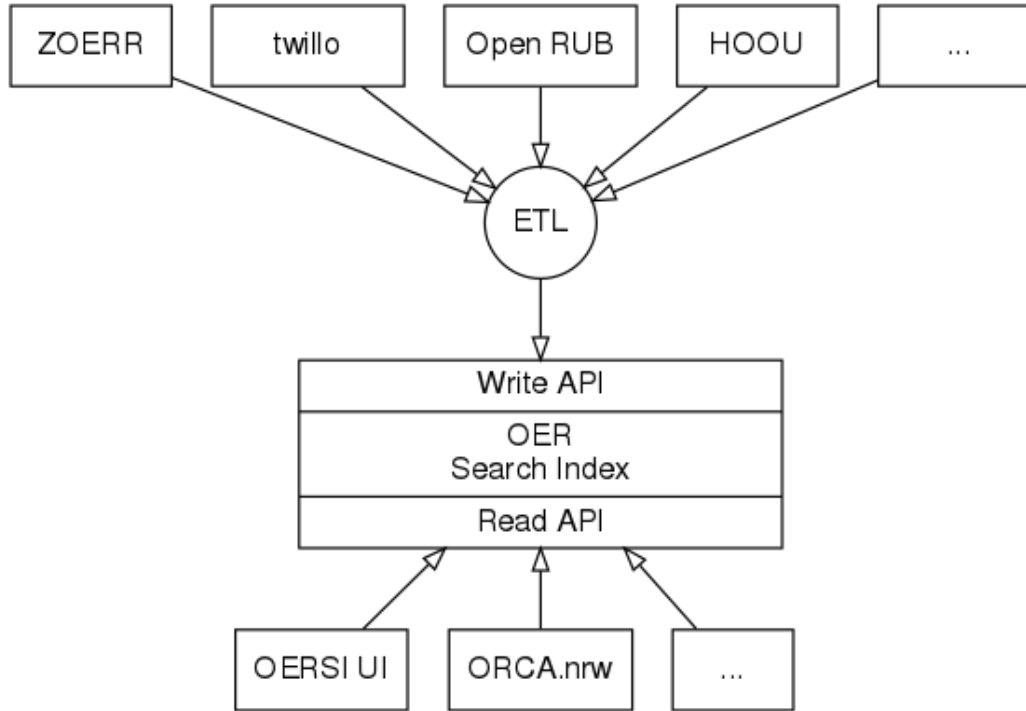
Existing Services

- International search portals for OER e.g.
 - OER Commons <https://www.oercommons.org>
 - OASIS <https://oasis.geneseo.edu>
 - Merlot <https://www.merlot.org>
- ... but ...
 - not open infrastructure
 - focus on English content
 - no reusability for distributed scenarios

Approach / Features



















- Modular ETL import process for extraction, transformation and loading
- Standardised JSON-LD metadata based on LRMI/schema.org and SKOS
- Multilingual user interface
- Embedding option for OERs in LMS or other contexts
- Open code, data, docs, API, standards

Architecture



Open Source Development

- Project management
- Automation
- Quality
- Participation

		OER Search Index Frontend 	User Interface for the OER Search Index
		OER Search Index ETL 	Extract, transform, and load metadata for the OER Search Index
		OER Search Index Setup 	Complete setup / installation of the OER Search Index
		OER Search Index Backend 	API / Backend for the OER Search Index
		OER Search Index Import Scripts 	Import metadata from external sources into the OER search index
		OER Search Index Blog 	blog posts about the oersi project

Project Management

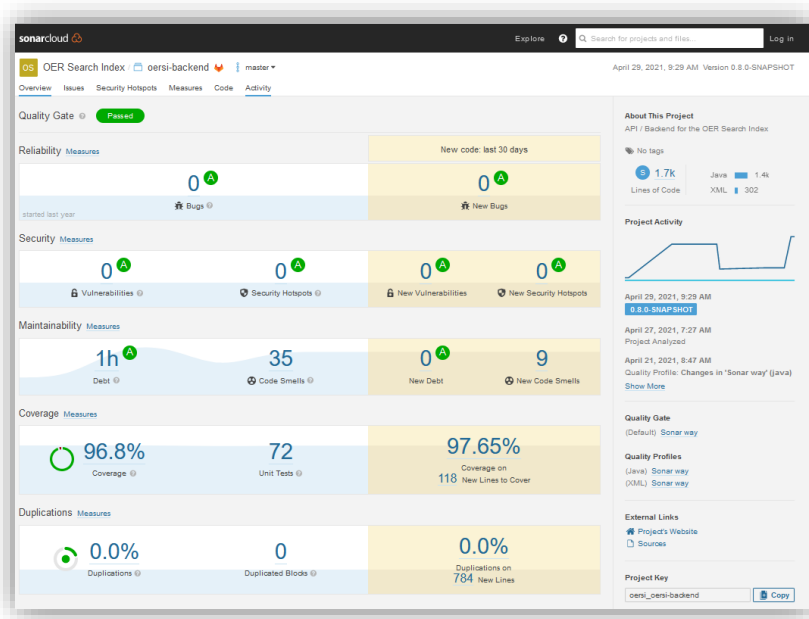
- Source code available on GitLab <https://gitlab.com/oersi> (MIT licence)
- Planning of upcoming tasks (new features, bug fixes) is done openly on GitLab Issue Tracker <https://gitlab.com/groups/oersi/-/boards>
 - Discussion of upcoming tasks
 - Documentation of approaches
 - Prioritisation
 - Planning of milestones
 - Transparent workflows with Kanban Board
- GitLab ServiceDesk triggered by contact form on OERSI

Automation

- With each change, the corresponding modules are built with GitLab CI in internal GitLab instance
 - automatically build and test for quality, performance and accessibility (Continuous Integration)
 - automatically install on development servers (Continuous Delivery)
 - installation on test and production servers at the push of a button
- Fast roll-out of new features and bug fixes without overhead

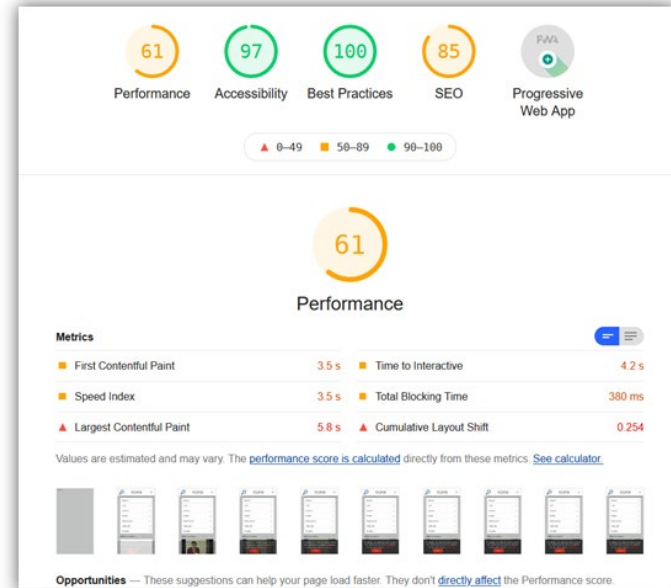
Code quality

- Automatic quality control via SonarCloud <https://sonarcloud.io/>
 - static code analysis with improvement suggestions
 - security optimization
 - test coverage
 - supports many languages such as Java, JS, Python and many more
 - free for open source projects
- Best to start as early as possible in a new project



Performance & Accessibility

- Automatic control of performance and accessibility via Google Lighthouse
 - <https://developers.google.com/web/tools/lighthouse>
 - Analysis of the display on mobile devices
 - Page loading speed
 - Search engine optimisation
 - Numerous suggestions for improvement
- Helps to optimize your application even if you think there is no issue



Participation

- Contact us for questions, feedback or suggestions
<https://oersi.de/resources/services/contact>
- Rise an issue for feature request or bug report
<https://gitlab.com/groups/oersi/-/issues>
- Feel free to participate in the development process
<https://gitlab.com/oersi/oersi-setup/-/blob/master/CONTRIBUTING.md>
- Integrate OERSI in your own platform
<https://oersi.de/resources/services/contact> (API in progress)
- Install your own index for a regional solution
<https://gitlab.com/oersi/oersi-setup>

Conclusion

- Freely available development tools enable distributed development of open source software in a robust, transparent, automated and sustainable way
- Enable lightweight, cross-institutional development of software projects

=> Why not also develop OER like software with open source development tools?

Thanks!

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