Contribution ID: **98** Type: **TALK**

Using SHACL Shapes to create semantic (meta)data

Monday 4 November 2024 10:30 (20 minutes)

Using RDF is a natural choice for modelling semantically linked metadata for FAIR research data. However, the learning curve for RDF is steep, and even for data stewards, becoming familiar with all the relevant technicalities can be a major barrier. Therefore, ULB Darmstadt is heavily involved in developing and providing services that facilitate the creation and use of semantic metadata, making the technology accessible to scientists without extensive knowledge of linked data.

We will present several services for the description of research data with structured, semantic metadata based on SHACL shapes and RDF. The services include:

- The NFDI4Ing Metadata Profile Service (https://profiles.nfdi4ing.de) allows creation, sharing, curation and reuse of SHACL-based application profiles. The profiles are created in a graphical user interface by combining suitable terms that can be selected from existing ontologies.
- The NFDI4Ing Data Ingest Service (https://ingest.nfdi4ing.de) is the gateway for enhanced research data publication in architecture and civil engineering. With flexible metadata profiles based on SHACL and automation processes, ing.est visualizes various 3D data formats, assigns persistent identifiers, and ensures long-term archiving.
- The CSV-RDF Mapper (demo at https://ulb-darmstadt.github.io/csv-rdf-mapper) allows conversion of tables to RDF data by mapping the table to a target format defined by a SHACL shape.
- The SHACL Search Engine (under active development, demo available in October 2024) indexes RDF data that conform to SHACL shapes using Apache SOLR and, based on the given SHACL shapes, generates a user interface with search facets that enable filtering the indexed data.

We will give an outlook on future plans and on possibilities to cooperate in this field.

Please specify ”other”

In addition, please add 3 to 5 keywords.

RDF, SHACL, application profiles, web-service

Please specify ”other”

For whom will your contribution be of most interest?

Researchers

Please assign yourself (presenting author) to one of the following groups.

Data professionals who provide and maintain data infrastructure

Primary authors: Dr FUHRMANS, Marc (TU Darmstadt); TITTEL, Stephan (TU Darmstadt)

Presenters: Dr FUHRMANS, Marc (TU Darmstadt); TITTEL, Stephan (TU Darmstadt)

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