# Data Governance

##### Session 2.2 (SEMANTiCS)

#### Time: Wednesday, September 18, 2024 - 13:00 to 14:30

#### Chair: Kossi Amouzouvi

## **Talks**

### Data Strategy in the Age of AI [SP]

Today, successful organizations transition from data management to knowledge management — a transformation in which the advent of AI plays a catalyzing role . Data strategy and data governance cannot rely anymore on the traditional methods. What is the role that RDF Knowledge Graph techniques can play in this environment? Is it a facilitating role or can they be a driver of change as well? Based on real-world projects in which we participated, I will provide some answers.

| Jan Voskuil (Taxonic) |
| --- |

### 

### Semantic Smart Readiness Indicator Framework

We propose the Semantic Smart Readiness Indicator framework, consisting of an SRI information model and a SPARQL-based SRI score calculation. We follow the Linked Open Terms ontology engineering method by specifying the use case from which the requirements and competency questions are derived. We reuse existing ontologies and extend them to create the SRI ontology. Findings: The model is published according to the FAIR principles. Moreover, it is flexible to accommodate specific SRI requirements, and can be aligned with existing semantic building models to facilitate data linking and exchange. The score calculation, in turn, is composed of multiple SPARQL queries defined over the model. Value: In this paper, we describe our proposed framework, the ontology engineering process, and the evaluation of both the model and the SPARQL-based SRI calculation. All the resources are openly available for reuse.

| Stefan Bischof | Erwin Filtz | Josiane Xavier Parreira |
| --- | --- | --- |

### 

### Teaming.AI: Enabling Dynamic Knowledge Graph Representations in Process-Driven Application Domains

The Teaming.AI project, funded through the European Commission's Horizon 2020 Research Programme under Grant Agreement Number 957402, intends to provide a human-AI teaming platform for maintaining and evolving AI systems in manufacturing. The project started back in Initiated in January 2021 and concluded in June 2024, a total of 15 research and industry partners from across Europe collaboratively developed a novel operational framework to cope with the heterogeneity of data types, the uncertainty of decisions, and the dynamic changes in the context of human-AI collaboration. A key component of the project is the Teaming.AI knowledge graph (KG), which acts as a digital shadow of human-AI collaboration scenarios. This KG has been deployed in three real-world manufacturing use-cases aimed at enhancing efficiency in plastic molding (Spain, Turkey) and improving the ergonomic health of workers in large part manufacturing (Spain). This industry talk features an interactive demonstration that showcases the implementation of the dynamic KG generation and population approach within one of the real-world human-AI collaboration scenarios.

| Franz Krause | Heiko Paulheim | Bernhard Moser |
| --- | --- | --- |

### Assessing the FAIRness of Software Repositories using RDF and SHACL

Trending repositories comply with fewer FAIR best practices than repositories expected to be FAIR on average. However, the latter still exhibit deficiencies, for example, regarding the correct application of semantic versioning. The low average runtime of the FAIRness assessment of respectively 3.94 and 6.20 seconds per repository permits the integration of QuaRe in, e.g., CI/CD pipelines. The FAIR principles are often mentioned as a measure to tackle the reproducibility crisis, which continues to have a significant impact on science. To implement these principles in practice, it is crucial to provide tools that facilitate the automated assessment of the FAIRness of software repositories. The enhanced version of QUARE introduced in this paper represents our proposal for this demand.

| Tobias Hummel | Leon Martin | Andreas Henrich |
| --- | --- | --- |

### 