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Type: TALK

Fundamentals of Scientific Metadata –A Hands-on Training Course on FAIR Data Handling for Researchers and Data Stewards

Tuesday 5 November 2024 11:00 (20 minutes)

Scientific research has been subject to the fast-progressing digitalization, which impacts how research is conducted today. Generation and sharing of data according to best practices, that support the digital change, bears numerous challenges for the scientists: Implementation of data documentation recommendations like the FAIR Principles 1 require profound knowledge and technical skills and thus well-trained, data-competent, and technically skilled researchers. The typical scientific curricula however, often don't include these aspects: More than 45 % of scientific staff state to have little to know prior knowledge about the FAIR principles and metadata handling, while general interest in training formats on these topics is high (91.7 %)2.

With our training course "Fundamentals of Scientific Metadata", we established training material that covers the fundamental elements of (meta)data generation and addresses early-career researchers of any scientific domain. The didactic concept of the course encourages and motivates the participants to begin and sustainably proceed with the structured, schema-conform documentation of their scientific (meta)data. The material covers the fundamentals of (semi-)structured metadata, schemas and standards, as well as persistent identifiers (PIDs). (Meta)data generation is a predominantly practical skill that should be acquired and consolidated in a hands-on manner. Therefore, our course makes use of familiar problems and interrelated exercises to encourage the participants to practically test and consolidate the newly acquired skills and concepts. An initially unfamiliar data object is annotated with increasingly structured metadata throughout the course, complying with the FAIR principles. We set our focus on the confident handling on JSON and the development and understanding of JSON schemas. The training material was created in a modular manner that effortlessly enables the adaption of the material to various target groups in skill level as well as scientific domains: we have realized adaptions in the domains of Materials Science and Engineering and Particle Physics as well as for the target groups Researchers and Data Stewards. The domain-agnostic version of the training material has been published comprehensively via The Carpentries Incubator 3. Publications of the adaptions are in preparation. To date, 11 instances of the domain-agnostic course and its individual adaptions have been conducted. Each instance was met with overwhelming interest in participation. We conclude every course instance with a comprehensive participants'evaluation. The evaluation results confirm the target group-oriented accuracy of the course contents as well as the high quality of our material.

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Please specify "other"

In addition, please add 3 to 5 keywords.

training course JSON schemas education HMC

Please specify "other"

This contribution can be equally interesting for multiple groups:

- Data professionals and stewards
- Data professionals who provide and maintain data infrastructure
- Expert panels, strategists and administrative stakeholders

For whom will your contribution be of most interest?

other (please specify below)

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

Data professionals and stewards

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