

ISWC 2017 RESOURCES

TRACK: Instructions for Authors and Reviewer

Freddy Lecue & Valentina Tamma

Slides based on Gray, A.J.G., and Sabou, M.: "ISWC2016 Resources Track: Author and Reviewer Instructions". figshare. <http://dx.doi.org/10.6084/m9.figshare.2016852>. December 2015.

Table of Content

- Introductory information on the ISWC 2017 resources track (Slide 3);
- Types of submissions:
 - data and software resources vs replications studies and benchmarks (Slide 5);
- Generic evaluation criteria (Slide 8);
- Data and Software Framework Specific Evaluation Criteria:
 - Ontologies and data (Slides 14 - 17);
 - Software frameworks, services and APIs (Slides 18 -19);
- Benchmarks and Replication Studies Evaluation Criteria (Slide 20):
 - Benchmarks (Slides 21 - 22);
 - Replication studies (Slide 23);
- Delineation from other tracks (Slides 24 - 25);
- Paper length guidelines (Slide 26 - 27);
- Licensing Information (Slide 28);
- Track timeline (Slide 29);

ISWC 2017 Resources Track Information

- The Resources Track is a novel track, that has a very specific focus, i.e. resources (data, software or studies) that are the necessary foundations to support advancement in research.
- This presentation articulates the evaluation criteria for the track for both authors and reviewers. It describes:
 - generic evaluation criteria that apply to all resources; and
 - resource type specific evaluation criteria.
- **Please read it carefully before you plan your submission or you start your reviewing duties**

What does “Resource” refer to

Resources are high quality information artifacts that are sufficiently generic to be reusable in novel contexts.

- Typical resources include, but are not restricted to:

- Datasets;
- Ontologies and vocabularies;
- Workflows;
- Evaluation benchmarks or methods;
- Replication studies;
- Services and APIs;
- Software frameworks;

- We welcome papers on *emerging resources*, i.e.:

- Ontology design patterns;
- Crowdsourcing task designs;
- Workflows;
- Methodologies;
- Protocols and measures;

Topics of interest (1 / 2)

A typical Resource track paper reports on one of the following categories:

- Ontologies developed for an application, with a focus on describing the modelling process underlying their creation;
- Datasets produced to support specific evaluation tasks or by a novel algorithm;
- Outcome and results obtained regarding the verification of an existing method by applying it to a new specific task;
- Description of a reusable research prototype / service supporting a given research hypothesis;

Topics of interest (2 / 2)

A typical Resource track paper reports on one of the following categories:

- Description of a reusable research prototype / service supporting a given research hypothesis;
- Description of a dataset produced by a novel algorithm;
- Description of community shared software frameworks that can be extended or adapted to support scientific study and experimentation;
- Benchmarking, focusing on datasets and algorithms for comprehensible and systematic evaluation of existing and future systems;
- Development of new evaluation methodologies, and their demonstration in an experimental study.

Resources evaluation criteria

Resources will be evaluated with respect to:

- Generic evaluation criteria:
 - Value;
 - Reusability;
 - Design and Technical Quality;
- Specific evaluation criteria:
 - Data and Software Frameworks specific evaluation criteria (8 pages papers);
 - Replication Studies and Benchmarks evaluation criteria (16 pages papers).

Generic evaluation criteria

A *good* resource is:

- Of ***high value***;
- Currently been ***reused*** or it has a high potential for being reused;
- Of exemplary ***technical quality***;
- Made ***available for reuse*** by its creators.

Generic criteria: Value (Potential Impact)

- Does the resource break new ground?
- Does the resource plug an important gap?
- How does the resource advance the state of the art?
- Has the resource been compared to other existing resources (if any) of similar scope?
- Is the resource of interest to the Semantic Web community?
- Is the resource of interest to society in general?
- Will the resource have an impact, especially in supporting the adoption of Semantic Web technologies?
- Is the resource relevant and sufficiently general, does it measure some significant aspect?

Generic criteria: Reusability

- Is there evidence of usage by a wider community beyond the resource creators or their project? Alternatively, what is the resource's potential for being (re)used; for example, based on the activity volume on discussion forums, mailing list, issue tracker, support portal, etc?
- Is the resource easy to (re)use? For example, does it have good quality documentation? Are there tutorials availability? etc.
- Is the resource general enough to be applied in a wider set of scenarios, not just for the originally designed use?
- Is there potential for extensibility to meet future requirements (e.g., upper level ontologies, plugins in Protégé)?
- Does the resource clearly explain how others use the data and software?
- Does the resource description clearly state what the resource can and cannot do, and the rationale for the exclusion of some functionality?

Generic criteria: Design and Technical Quality

- Does the design of the resource follow resource specific best practices?
- Did the authors perform an appropriate re-use or extension of suitable high-quality resources? For example, in the case of ontologies, authors might extend upper ontologies and/or reuse ontology design patterns.
- Is the resource suitable to solve the task at hand?
- Does the resource provide an appropriate description (both human and machine readable), thus encouraging the adoption of [FAIR](#) principles? Is there a schema diagram? For datasets, is the description available in terms of VoID/DCAT/DublinCore?
- If the resource proposes performance metrics, are such metrics sufficiently broad and relevant?
- If the resource is a comparative analysis or replication study, was the coverage of systems reasonable, or were any obvious choices missing?

Generic criteria: Availability

- **Mandatory:** Is the resource (and related results) published at a persistent URI (PURL, DOI, w3id)?
- **Mandatory:** Is there a canonical citation (e.g. DOI) associated with the resource?
- **Mandatory:** Does the resource provide a licence specification? (See creativecommons.org or opensource.org for more information)
- Is the resource publicly available? For example as API, Linked Open Data, Download, Open Code Repository.
- Is the resource publicly findable? Is it registered in (community) registries (e.g. Linked Open Vocabularies, BioPortal, or DataHub)? Is it registered in generic repositories such as [FigShare](https://figshare.com), [Zenodo](https://zenodo.org) or [GitHub](https://github.com)?
- Is there a sustainability plan specified for the resource? Is there a plan for the maintenance of the resource?
- Does it use open standards, when applicable, or have good reason not to?

Specific evaluation criteria

- Specific evaluation criteria:
 - Data and Software Frameworks specific evaluation criteria (8 pages papers):
 - Pages 14 to 19;
 - Replication Studies and Benchmarks evaluation criteria (16 pages papers):
 - Pages 20 to 24

Data and Software Frameworks

- Specific evaluation criteria for the following resources:
 - Ontologies and vocabularies;
 - Datasets;
 - Synthetic and annotated datasets;
 - Software Frameworks;
 - Services and APIs;
- Submissions length: 8 pages;
- **There is no expectation for an evaluation, the focus of the paper should be on the sustainability and community surrounding the resource.**

Ontologies and vocabularies

Purpose:

- Publish descriptions of ontologies and vocabularies that capture and formally represent domain models.

Evaluation criteria:

- Is the chosen design suitable for the intended purpose?
- Is the chosen design of high quality? (e.g., no hacks and workarounds, no redundancy)
- Is the ontology logically correct? (e.g., logical consistency, correct use of the modelling language primitives)
- Have other resources been reused? E.g., upper level ontologies, domain ontologies or ontology design patterns
- Is the documentation of good quality? Are the core ideas of the ontology described? Are the major ontology elements described? Does the documentation include explanatory diagrams?

Datasets

Purpose:

- Publish data for reuse and further discovery or even for building real-world solutions.
- Support developers in testing their own systems

Evaluation criteria:

- Is there a similar data set?
- Is the data set of interest to the semantic web community (and society in general)?
- Is the quality of the data and metadata sufficient for reuse? Does it conform to the [FAIR data principles](#)? Is the metadata published using VoID and/or conforming to community standards (e.g. DCAT, HCLS community profile, ...)?
- Is the data set semantic, linked, etc.? Does it use URIs?
- Is it available to the community? Is it listed in a community repository?
- Was the data used for something scientific, practical, etc.?
- Is the data likely to be repurposed for other uses?

Synthetic and Annotated Datasets

Purpose:

- Help developers test and evaluate their own systems

Evaluation criteria:

- Same as data sets plus:
- Synthetic data
 - Is the data generator scalable?
 - Does the data capture important characteristics of the equivalent real-world data?
 - Is the data of interest to the community?
- Annotated data
 - Are the annotations limited to a specific context?
 - Are the assumptions sufficiently described?
 - Is the data of interest to the community?

Software Frameworks

Purpose:

- Description of software frameworks that provide functionalities reusable across projects.

Evaluation criteria:

- Is there already a similar software framework available? If yes, how does it differ?
- How difficult is it to replicate the software's functionality with other pieces of code?
- Are the chosen abstractions useful and likely to generalize to other problems?
- How is the quality and performance of the tool/system? Papers should include a clear evaluation of the performance of the tool/system according to relevant measures (speed, usability, efficiency, etc.)
- Does it have a community around it? E.g., active mailing list, issue trackers, can be (or better is being) used by others.

Services and APIs

Purpose:

- Description of services and APIs made available for general use.

Evaluation criteria:

- Is the functionality of the service clear and of interest to the community? Are important features of the service published, e.g. number of records in a registry?
- Are relevant metrics about the service provided, e.g. uptime of the service, service levels, etc?
- Is the service well documented to enable use, e.g. availability of tutorials, code snippets, etc.? Is the API documented in a machine processable way?
- Is there evidence that the service is widely used?

Replication Studies and Benchmarks

- Specific evaluation criteria for the following resources:
 - Ontologies and vocabularies;
 - Datasets;
 - Synthetic and annotated datasets;
 - Software Frameworks;
 - Services and APIs;
- Submissions length: 16 pages;
- **These papers are expected to include evaluations and therefore may be more lengthy. They are not expected to describe a resource such as an ontology but to describe an evaluation framework or experiment.**

Benchmarks, data and tasks

Purpose:

- Provide a standard approach to evaluating semantic web systems and reporting the results.

Evaluation criteria:

- Does the benchmark measure something significant (is it relevant and sufficiently general)?
- Are the proposed performance metrics sufficiently broad and relevant?
- Are the tasks well motivated in terms of testing the system or mimicking real-world scenarios?
- Is the scale of the dataset appropriate? Can it be scaled on appropriate metrics?
- Is there already a similar benchmark (if yes, how does it differ)?
- Can others use the data and software of the benchmark?

Benchmarks, methods and results

Purpose:

- Provide a standard approach to evaluating semantic web systems and reporting the results.

Evaluation criteria:

- Has the benchmark been run on at least three different systems (not variants of the same system)? Was the coverage of systems reasonable, or were any obvious choices missing? Is a suitable baseline provided?
- Are sufficient experimental details provided to enable interpretation of the results and replication of the experiments (e.g. software version numbers, hardware details, etc)?
- Have good experimental protocols been followed (e.g. warm-up periods, multiple runs, standard errors reported, etc)?
- Are the results discussed and explained sufficiently?

Replication studies

Purpose:

- Replication of prior work;
- Investigation of important, possibly overlooked aspect;
- Challenge prior truisms and assumptions;

Evaluation criteria:

- What is the relevance of prior study? Did it overlook an important aspect, assumption, truism?
- Has it been done before?
- Was there an important/relevant lesson to be learned from the replication?
- Were hidden assumptions of the original experiment exposed?
- What is the validity of replication? Note, this includes internal, construct, and external validity.
- How reliable/faithful is the replication?
- Reporting of results (see Benchmarks, methods and results).

Is this the right track for my paper?

- The Resources track provides an outlet for traditional data based resources (ontologies, datasets, benchmarks, replication studies) but also services, APIs and software frameworks that are sufficiently generic in scope that could be considered resources.
 - For instance, a paper that described the OWL API would be a good fit for the *Resources Track*;
 - If the paper described how the OWL API was used within a specific application, then it would be more appropriate for the *In-Use Track*;
 - A paper presenting a new, extended version of the OWL API should be submitted to the *Research Track*;

Is this the right track for my paper?

- Ontology and vocabulary papers:
 - A good fit for the Resources Track is a paper whose main contribution is the detailed description of an ontology including:
 - Details on how a specific methodology was used to build the ontology;
 - Predicted impact;
 - Validation through real use cases;
 - Comparison with existing ontologies;
 - Performance of SPARQL queries over possible evaluation scenarios;
 - A good fit for the In-Use Track is a paper describing how an ontology was used to support a specific novel application.

Is my paper the right length?

- Papers describing the following resources must not exceed 8 pages in length:
 - Ontologies and vocabularies;
 - Datasets;
 - Synthetic and annotated datasets;
 - Software Frameworks;
 - Services and APIs;
- **There is no expectation for an evaluation, the focus of the paper should be on the sustainability and community adoption of the resource.**
- The 8 pages should include all the relevant information including links to additional documentation, examples of reasoning supported by the resource, SPARQL queries over specific scenarios, performance over specific datasets (if included) etc.
- Ontologies and vocabularies, Datasets, Synthetic and annotated datasets, Software Frameworks, Services and APIs papers that exceed the page limit will be rejected without review.

Is my paper the right length?

- Papers describing the following resources must be 16 pages in length:
 - Benchmarks
 - Including description of the data, tasks, methods and results;
 - Replication studies
- The 16 pages should include all the relevant information including links to software repositories, data sets, extended results etc.
- Benchmarks and replication studies papers that exceed the page limit will be rejected without review.
- **These papers are expected to include evaluations and therefore may be more lengthy. They are not expected to describe a resource such as an ontology or a software framework but to describe an evaluation framework or experiment.**

Materials released under CC-BY License

You are free to:

- **Share**
 - copy and redistribute the material in any medium or format
- **Adapt**
 - remix, transform, and build upon the material for any purpose, including commercial.

The licensor cannot revoke these freedoms as long as you follow the license terms.

Under the following terms:

- **Attribution** — You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

Citation:

Lecue F., and Tamma, V.: “ISWC 2017 Resources Track: Author and Reviewer Instructions”. <http://dx.doi.org/10.6084/m9.figshare.4679152>. Feb 2017.



Track timeline - deadlines are midnight Hawaii time

Authors	
Abstracts:	8 May 2017
Papers:	15 May 2017
Rebuttal period:	23 - 27 June 2017
Notification:	14 July 2017
Camera Ready:	28 July 2017
Metadata:	1 August 2017

Reviewers	
Paper Bidding:	9 May - 14 May 2017
Paper assignment:	18 May 2017
Review deadline:	15 June 2017
Acknowledgement of rebuttals:	28-30 June 2017
Paper discussion:	1-5 July 2017
	29