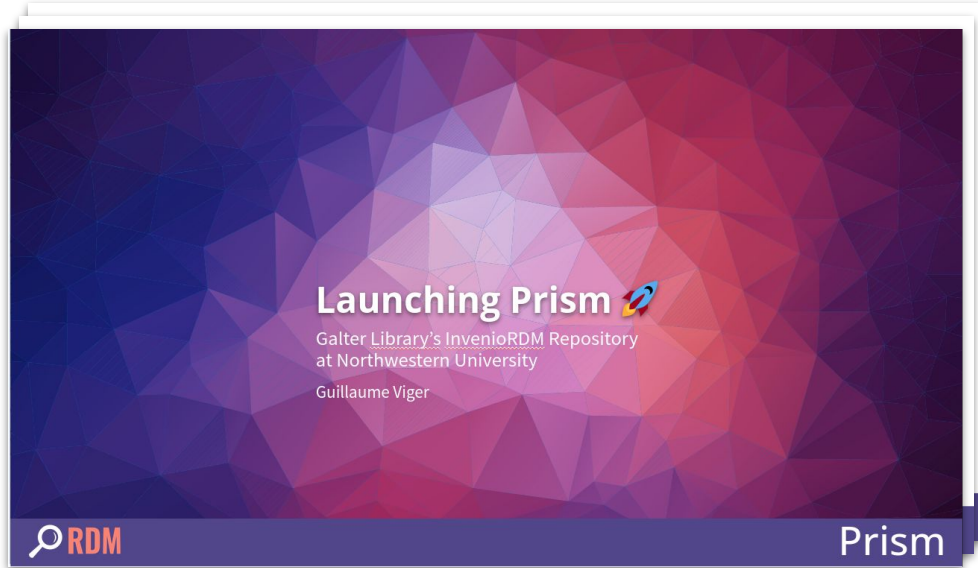


Signposting InvenioRDM



Guillaume Viger
guillaume.viger@northwestern.edu

Past Presentation



OR2023 Presentation


<https://doi.org/10.5281/zenodo.8023551>

Signposting

Signposting at OR2023



Signposting
Making Repository Content More Machine-Accessible



Martin Klein
Los Alamos National Laboratory (LANL)
mklein@lanl.gov
<https://orcid.org/0000-0003-0130-2097>

<http://signposting.org/>
<https://signposting.org/FAIR/>

Los Alamos
NATIONAL LABORATORY

Signposting - Making Repository Content More Machine-Accessible
@martinkle1n
OR 2023, South Africa, June 14 2023

1 3

<https://doi.org/10.5281/zenodo.8091605>

OR2023 Presentation

What is Signposting?

Signposting is an interoperable means to structure the discovery of scholarly web resources for machine agents

What problem does it seek to solve?

Humans can identify

- Authors
- DOI
- Formats
- Files
- License
- Type

Published March 16, 2022 | Version Final2

Representing Socio-Economic Uncertainty in Human System Models

Monis, Jennifer¹, Reilly, John¹, Palbox, Sergey¹, Sokolov, Andrei¹, Cox, Kenneth¹

This data repository is associated with the paper:
Monis, J., J. Reilly, S. Palbox, A. Sokolov and K. Cox (2022). Representing socio-economic uncertainty in human system models. *Earth's Future*, In press.

Notes

Fixed variable names in excel files in 2C.zip folder

Files

The data in this repository are from the paper:
Monis, J., J. Reilly, S. Palbox and A. Sokolov (2021). Representing socio-economic uncertainty in human system models. Submitted to *Earth's Future*. This paper quantifies key socio-economic uncertainties using the MIT Economic Projection and Policy Analysis (EPPA) Model. The data and scripts available for this paper are listed below. Related information can be found in the paper and the Supporting Information. Included in the repository:

- 1_Samples for Ensembles.xls: table of the sampled values for uncertain socio-economic input parameters used in all ensembles.
- 2_GDP.zip: zipped folder of files and scripts used to create gdp sample files (2g)
 - (a) 20-08 GDP Data (1990-2019).xls: excel file of the country-level Conference Board GDP data used and its aggregation into EPPA regions
 - (b) 20-08 Volatility GDP (1990-2019).xls: excel file calculating the volatility in GDP growth for each region
 - (c) 20-08 GDP shock distributions and samples by region.xls: 400 samples of GDP growth shocks for each region for each year from 2010-2019
 - (d) 2d_08backsamples folder: folder of text files for the 400 GDP growth samples for each region used in the random walk script (2f)
 - (e) eppaegp.txt: text file used in random walk script (2f) as the drift term in the random walk
 - (f) r4d2.txt: random walk script that reads in the regional sample GDP growth shocks (2g) and the eppaegp.txt (2a) and creates 400 sample (g) 20-08 sample files folder: folder of gdp growth input files read in by the eppa model (these are used in the "baseline" ensemble walk)
- 3_POP.zip: zipped folder of files and scripts used to create population sample files (3g)
 - (a) 20-08 POP EPPA2015_Pop_Aggregate_Trajectories_2000.xls: 1000 population trajectory samples for aggregated regions from the UN
 - (b) 20-08_2010_PPP2015_Pop_Trajectories_1000.xls: 1000 country-level population trajectory samples from the UN
 - (c) 20-08_Country_codes.xls: UN country codes and mappings to EPPA regions
 - (d) 20-08 Global Population from samples.xls: excel file that draws 400 world population samples for 2100 based on the 1000 world population

Name	Size	Download all
0_Readme.txt	6.9 kB	Preview Download
1_Samples for Ensembles.xls	7287 kB	Download
2C.zip	59.9 MB	Preview Download
3_POP.zip	66.8 MB	Preview Download
4_REST.zip	1.3 MB	Preview Download
5_POP and Process Ensembles.zip	21.0 kB	Preview Download
6_ensembles_datafiles.zip	16.4 MB	Preview Download
7_Somatos Discovery.zip	77.1 kB	Preview Download

Citations

Show only: Literature (1) Dataset (0) Software (0) Unknown (0) Search for dataset... Search

Citations To This Version

Representing Socio-Economic Uncertainty in Human System Models
Monis, Jennifer et al. DOI: 10.1029/2021ef002239 2022 DOI

Page size: 10

417 VIEWS 88 DOWNLOADS

Version Final2 10.5281/zenodo.6030018 Mar 16, 2022

Version Final 10.5281/zenodo.5802021 Mar 16, 2022

Version resubmission 10.5281/zenodo.5802018 Dec 23, 2021

Version submission 10.5281/zenodo.4837388 May 28, 2021

External resources

Indexed in

OpenAIRE

Keywords and subjects

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Details

DOI 10.5281/zenodo.6030018

Resource type Dataset

Publisher Zenodo

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Style APA

Export JSON

Technical metadata

Created June 12, 2023

Modified June 13, 2023

Jump to

What it looks like concretely

1

```
> GET https://zenodo.org/records/8030018
```

```
> ...
```

```
< 200 OK
```

```
< link: <https://zenodo.org/api/records/8030018> ; rel="linkset"  
; type="application/linkset+json"
```

```
< ...
```


What it looks like concretely

2

> GET <https://zenodo.org/api/records/8030018>

> Accept: application/linkset+json

> ...

< 200 OK

< ...

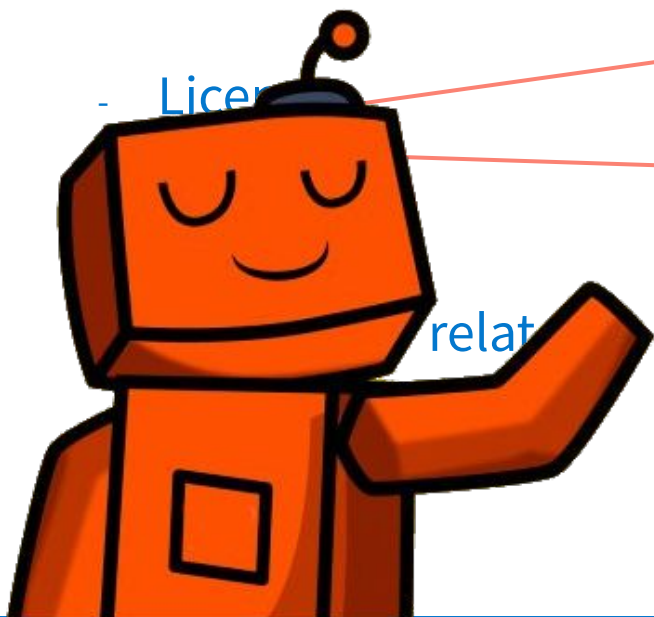
< {"linkset": [{"anchor": "<https://zenodo.org/records/8030018>", ... }]

Problem solved

Robots can identify

- Authors
- DOI
- Formats
- Files

```
{
  "linkset": [
    {
      "anchor": "https://zenodo.org/records/8030018",
      "author": [
        {
          "href": "https://orcid.org/0000-0001-7675-558X"
        }
      ],
      "cite-as": [
        {
          "href": "https://doi.org/10.5281/zenodo.8030018"
        }
      ],
      "describedby": [
        {
          "href": "https://zenodo.org/api/records/8030018",
          "type": "application/dcat+xml"
        },
        {
          "href": "https://zenodo.org/api/records/8030018",
          "type": "application/json"
        }
      ],
      "item": [
        {
          "href": "https://zenodo.org/records/8030018/files/1_Samples_for_Ensembles.xlsx",
          "type": "application/octet-stream"
        },
        {
          "href": "https://zenodo.org/records/8030018/files/5_Run_and_Process_Ensembles.zip",
          "type": "application/zip"
        }
      ]
    }
  ]
}
```



```
...  "item": [
...    {
...      "href": "https://zenodo.org/records/8030018/files/1_Samples_for_Ensembles.xlsx",
...      "type": "application/octet-stream"
...    },
...    {
...      "href": "https://zenodo.org/records/8030018/files/5_Run_and_Process_Ensembles.zip",
...      "type": "application/zip"
...    },
...    {
...      "href": "https://zenodo.org/records/8030018/files/6_Ensemble_Results.zip",
...      "type": "application/zip"
...    }
...  ],
...  "license": [
...    {
...      "href": "https://creativecommons.org/licenses/by/4.0/legalcode"
...    }
...  ],
...  "type": [
...    {
...      "href": "https://schema.org/Dataset"
...    },
...    {
...      "href": "https://schema.org/AboutPage"
...    }
...  ]
... },
... // From other direction
... {
...   "anchor": "https://zenodo.org/records/8030018/files/1_Samples_for_Ensembles.xlsx",
...   "collection": [
...     {
...       "href": "https://zenodo.org/records/8030018",
...       "type": "text/html"
...     }
...   ]
... }
... ]
... }
```

Adoption

- Start Date: 2023-08-01
- RFC PR: #XXX
- Authors: Guillaume Viger

Signposting in InvenioRDM

Summary

Signposting is an interoperable means to structure discovery of scholarly web resources for machine agents. Under its FAIR Signposting Profile Level 2 implementation, it consists of providing a Link Set link in the headers of specific HTTP responses on InvenioRDM, and providing an associated endpoint for that Link Set link. The Link Set endpoint returns a mapping of source-target links with some additional information that outline the web geography of the scholarly resources.

Signposting is a nascent standard described here: <https://signposting.org/FAIR/#level2> and recommended as a next-generation repository feature by COAR here: <https://nrg.coar-repositories.org/technology/signposting/>. We encourage visiting the former link as it presents a complete picture of Signposting which this RFC will not repeat.

Motivation

Signposting is an interoperable means to structure discovery of scholarly web resources for machine agents. It is straightforward for humans to visit an InvenioRDM record landing page and discover links to DOIs, ORCIDs, content files, metadata formats, and so on. For a machine agent, the meaning behind the myriad of links is not self-evident and establishing a scraping logic for every different platform is not a scalable solution for client discovery tools. Signposting provides a Link Set for machine agents to navigate each resource in an InvenioRDM instance.

Use cases

- As a machine agent, I want to clearly identify the scholarly links associated with a resource.
- As the developer of a scholarly discovery tool, I want to rely on a standardized, universal format for link crawling.
- [Other scholarly repositories](#) such as DSpace, Dataverse, OJS have implemented it in their recent releases.

Detailed Design

Add a Link Set link to the header of

the landing page response:

```
> curl --head /records/<pid_value>
Content-Type: text/html; charset=utf-8
Content-Length: 7082
...
Link: <https://inveniordm.example.org/api/records/<pid_value>; rel="linkset"; type="application/linkset+json">
```

the content resource response (download):

- COAR next-generation feature
- DSpace, Dataverse and others have implemented it already
- Straightforward specification
- Independent feature
- Interest from partners institution and me
- Request For Comment
- 2 repos affected



Discoveries

- Specification-wise:
 - Anchor to target for formats needed types
 - Redundancy
 - Potential absence of header link on third-party served files is ok
- Implementation-wise:
 - Uncovered fundamental test misunderstanding leading to significant performance gains
 - Investigate better link generation



There you have it...

- Covered signposting
 - What it is
 - What its motivations are
 - How it's implemented in InvenioRDM
 - Adoption process
 - Discoveries along the way
- Possibilities from there
 - Signposting: Versions and other relationships
 - InvenioRDM: openness to other standards

References

- Klein, M., Walk, P., Shearer, K., & Rodrigues, E. (2023, June 14). Signposting: Making Repository Content More Machine-Accessible. Open Repositories 2023 (OR2023), Stellenbosch, South Africa. Zenodo. <https://doi.org/10.5281/zenodo.8091605>
- Original robot image: https://www.linkedin.com/posts/player-xp_ai-gamingindustry-gaming-community-activity-7151539769691316224--8cm
- Example Zenodo page: <https://zenodo.org/records/8030018>