Enhancing CPS Data Reproducibility

Afternoon Session:
Automating Public Data Reproducibility

13 May 2024

Preparing Your Data

Create a username on [the CPS-VO](#) or log-in

Confirm the project's license

Confirm the Award ID for the project

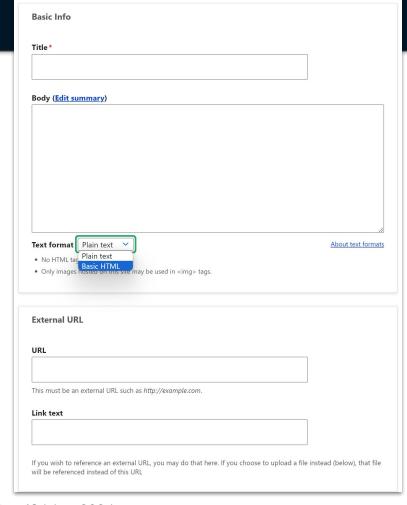Gather a list of project collaborators

Navigation

1. Login to [cps-vo.org](cps-vo.org)
2. Visit the tutorial homepage:
   https://cps-vo.org/group/2024CPSTutorial
3. Select "Files"
4. Select "+ Add File"

Adding Data

Add information for your data

One main link can be added as an "External URL"

Additional links can be provided in the project description by selecting "Basic HTML" as the Text Format

Basic Info

Title *

Body (**Edit summary**)

Text format | Plain text ▾ |

About text formats

- No HTML tag~~s~~
- Only images hosted on this site may be used in <img> tags.

Plain text
Basic HTML

External URL

URL

This must be an external URL such as *http://example.com*.

Link text

If you wish to reference an external URL, you may do that here. If you choose to upload a file instead (below), that file will be referenced instead of this URL

Adding Data

Provide a license for the data

If available, search for the associated award number
    Use commas to separate between multiple Award Numbers

License

Creative Commons 2.5 ⌄

Intellectual property considerations: All materials contributed to the CPS-VO portal must have clearly defined rights and privileges. If you need a license type not listed, please contact us at ip@cps-vo.org to get it added. License information can be viewed at http://opensource.org/licenses/alphabetical.

Associated Award Number

2135579 (111907)   🔍

Example Data Upload

https://cps-vo.org/node/98399

A Middle Way to Traffic Enlightenment: Repeatability Evaluation Package

🔲 VISIT URL

Our repeatability evaluation package includes data, python notebooks for recreating our quantitative figures, and a docker image to playback the recorded ROS bag file simulating the ROS message passing network. If you have never used these before, install the proper resources on your machine here:

- Docker Install: https://docs.docker.com/engine/install/
- Jupyter Install: https://jupyter.org/install

A. File Resources
You can find the relevant files at this Zenodo DOI: https://zenodo.org/records/10611821*B. Docker Image*
The Docker image provides a ROS integration to automatically perform a realtime replay the rosbag file from the experiment. To replay the data, navigate to the *docker/* directory, then build and run with the following commands:

- $ docker build -t middleway .
- $ docker run -it middleway

The Docker container invokes its own roscore, so external ROS systems may connect to the container as a ROS host to view and analyze ROS topics. Alternatively, The container can connect to an external ROS host by connecting to the container with bash, then manually configure the host and manually perform the rosbag play:

- $ docker build -t middleway .
- $ docker run -it middleway bash
- $ export ROS_MASTER_URI="http://<external hostname or IP>:11311"
- $ rosbag play 2023_10_23_11_13_42_2T3MWRFVXLW056972cbf_codegen_test.bag

*C. Reproducing Figures*Inside the Zenodo resource, there are seveal '.ipynb' jupyter notebook files inside directories labelled with the figures they recreate. Figures 6-12 are available to recreate, as the earlier figures in the paper are photographs or diagrams. Once you open the notebooks in Jupyter, you will be able to run a series of small cells with python scripts which will recreate the figures in the paper with the data files inside the folders.

⚡ RELATED PROJECT

Award:
🏷 2135579

Tags:
🏷 DATASET

Submitted by Stephen Rees on Tue, 04/30/2024 - 15:38

Accessing the Data

The updated data can be accessed:

- Through the <u>tutorial files</u>
- Through the file <u>URL</u>
- From the <u>project site</u> on the CPS-VO (if applicable)
- Via the CPS-VO Search Function