

Foundations of Research Software Publication

Institute for Software Technology (SC)

Intelligent and Distributed Systems (IVS)

Sustainable Software Engineering (SSE)

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Knowledge for Tomorrow



Institute for Software Technology

DLR Institute for **Software Technology**,
Software Engineering, **Artificial Intelligence**, and
Scientific Computing

About 100 scientists at five sites

- **Cologne**
- Berlin-Adlershof
- **Braunschweig**
- Oberpfaffenhofen
- Bremen-Airport (ECOMAT)

<https://www.DLR.de/sc>

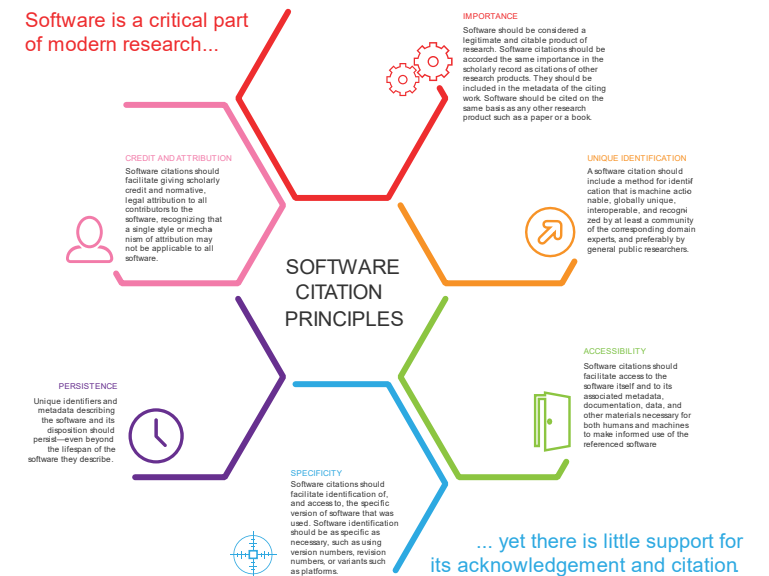


Our Mission

We improve software quality at DLR, at Helmholtz and world-wide.

We research, develop and implement solutions for software engineering.

We work to raise awareness of software as a research output in its own right.



DLR

Some Facts around Software Development

Some numbers...

- More than 1500 employees develop software

Characteristics

- „Developer“ often do not have any training in software development
- Huge amount of software projects
- Variety of used software technologies

How to support scientists to develop sustainable software?



Software Engineering Initiative at DLR

Software Engineering Initiative at DLR

Network

Guidelines

Tools

Trainings

Knowledge and
Experience
Exchange



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Training: Foundations of Research Software Publication



Knowledge for Tomorrow



Recommendations for FAIR Research Software

- Use a version control system
- Code Quality
- Documentation
- Software Licenses
- Software Citation
- Releases and Publication

```
astronaut-analysis.py 5.00 KiB
1  """
2  SPDX-FileCopyrightText: 2018 German Aerospace Center (DLR)
3  SPDX-License-Identifier: MIT
4
5
6  This script analysis the astronaut data set and creates different plots as result.
7  """
8
9
10 from datetime import date
11
12 import pandas as pd
13 import matplotlib.pyplot as plt
14
15
16 _ASTRONAUT_DATA_FILE = "../data/astronauts.json"
```



Recommendations for FAIR Research Software

Use a version control system

Code Quality

Documentation

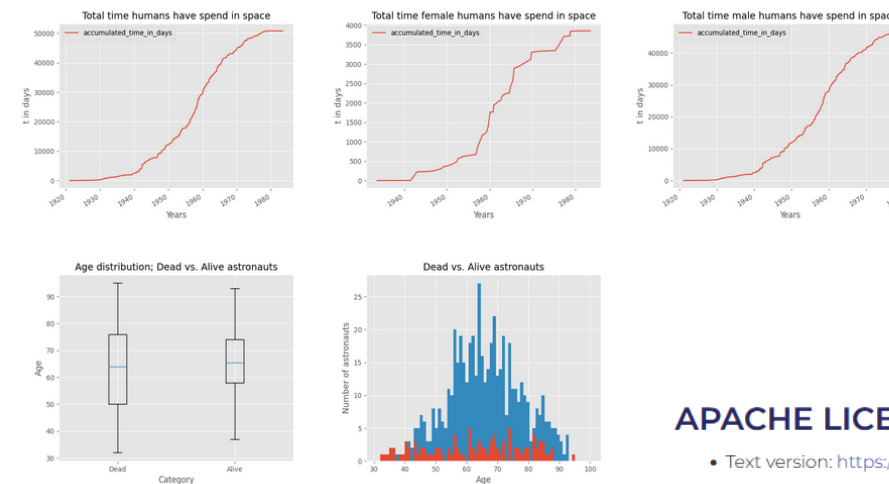
Software Licenses

Software Citation

Releases and Publication

Astronaut Analysis

This analysis is based on publicly available astronauts data from [Wikidata](#). In this context, we investigated aspects such as time humans spent in space as well as the age distribution of the astronauts.



APACHE LICENSE, VERSION 2.0

• Text version: <https://www.apache.org/licenses/LICENSE-2.0.txt>

The repository is organized as follows:

- **data:** Contains the astronauts data set retrieved from Wikidata
- **code:** Contains the astronaut analysis script
- **results:** Contains the resulting analysis plots



Recommendations for FAIR Research Software

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The screenshot shows the Zenodo interface for a dataset titled "Astronaut Analysis". The header is blue with the Zenodo logo, a search bar, and links for "Upload" and "Communities". The dataset is dated "March 17, 2021" and is marked as a "Dataset" and "Open Access". The authors are listed as "Stoffers, Martin" and "Schlauch, Tobias". A description states: "This analysis is based on publicly available astronauts data from Wikidata. In this context, we investigated aspects such as time humans spent in space as well as the age distribution of the astronauts." Below the description is a "Share" section with a "Cite as" field containing the citation: "Stoffers, Martin, & Schlauch, Tobias. (2021). Astronaut Analysis (2021-03-17) [Data set]. Zenodo. https://doi.org/10.5281/zenodo.5018166".

zenodo Search Upload Communities

March 17, 2021 Dataset Open Access

Astronaut Analysis

Stoffers, Martin; Schlauch, Tobias

This analysis is based on publicly available astronauts data from Wikidata. In this context, we investigated aspects such as time humans spent in space as well as the age distribution of the astronauts.

Share

Cite as

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Our Questions to You

1. What additional broad (FAIR) topics you would like to learn/discuss in a new or extended workshop?
2. What are important subjects/talking points which need to be addressed within a topic?

Training Material: <https://gitlab.com/hifis/hifis-workshops/make-your-code-ready-for-publication>

