

Towards a New Repository for Feature Model Exchange

José A. Galindo and David Benavides



Feature model exchange



Feature model repository



Who wants?



Wants: the researcher

- **I want to upload models to the repository, so that my models are available for others.**
- I want to syntax check my models before uploading in the repository.
- I want to generate a universal identifier for my models in the repository.
- I want to create communities



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Wants: the user

- **I want to have recommendations according to my profile, so that I can do better model selections**
- I want to see model's metrics, so that I can have extra information about the models.
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Wants: the researcher and user

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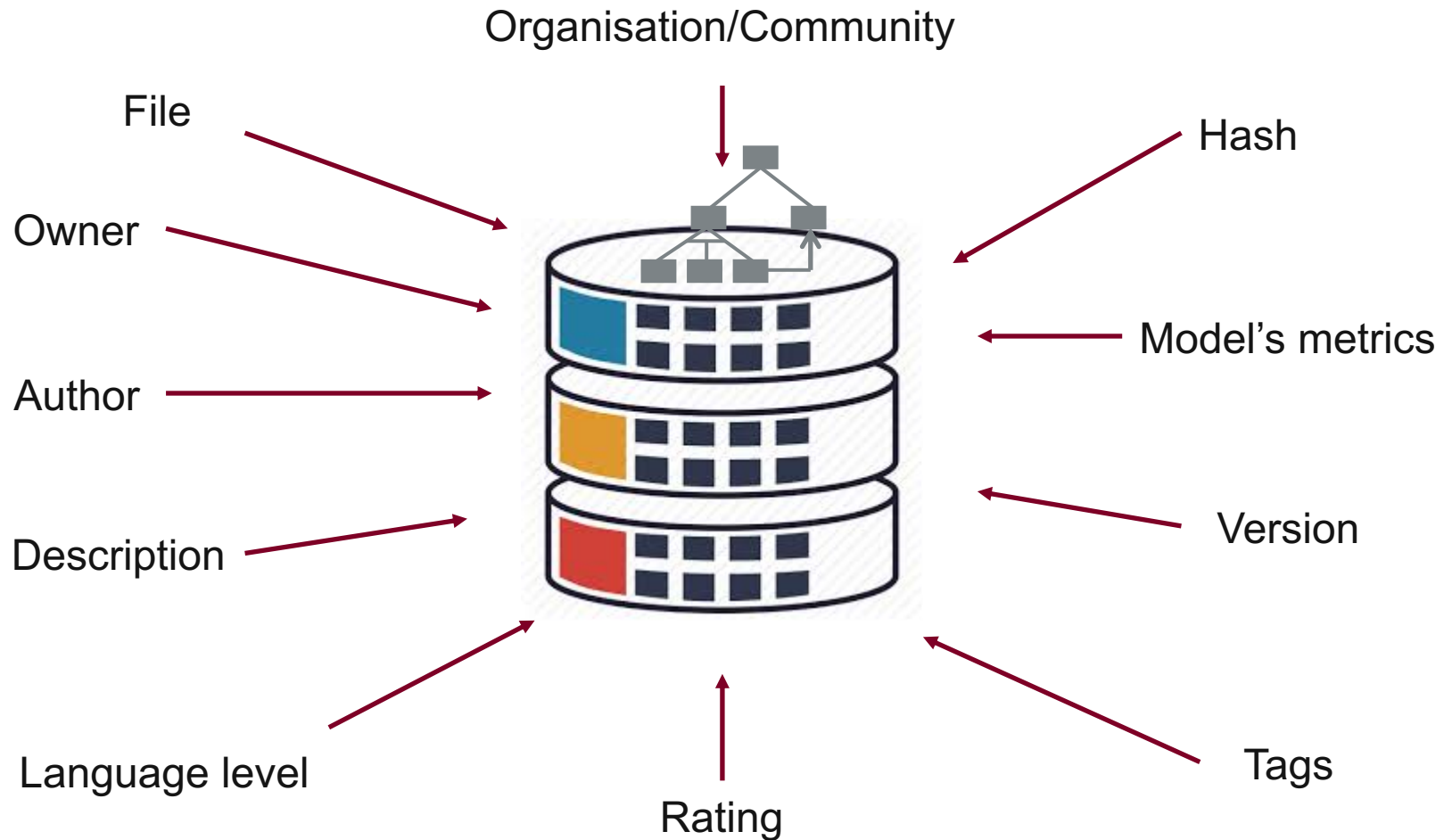


Wants: the developer

- I want to have an API that can interact with the repository



The identified information needs



Technological stack

- **Extensible.** This repository feature responds to the need of providing rest interfaces, support for multiple attributes per model as well as the creation of communities.
- **Light.** Due the amount of optional features identified it would be interesting to rely on a small core.
- **Reliable.** There are several repositories that were built during the last years. It would be advisable that the core component of our repository is backed up by a larger project.

Existing solutions



The screenshot shows the INVENIO website. At the top, there is a navigation bar with links: Get started, Features, Examples, Documentation, Community, Roadmap, and Blog. The main header features the INVENIO logo in large white letters on a dark blue background. Below the logo, the text reads "Open Source framework for large-scale digital repositories". At the bottom of the header, there are two white buttons: "See examples" and "Get started".



The screenshot shows the Zenodo website. The header is blue with the Zenodo logo and navigation links: Home, About, and Documentation. There are also buttons for "Sign in" and "Log out". The main content area is titled "Recent uploads" and lists several research datasets. Each entry includes a title, a brief description, and a "Download" button. On the right side, there are two promotional boxes: "Zenodo now supports DOI versioning" and "Using Docker?". At the bottom, there is a section titled "Zenodo on a nutshell" with a list of features: Research, Data, Software, Publications, and more.

Dependencies with others

- *Language Levels for Feature Modeling Notations.* We identified five levels:
 - Basic (mandatory, optional, set ...),
 - Cardinality based feature models ($\{n..m\}$),
 - Complex-constraints feature models (cnf etc)
 - Attributed feature models(attributes and complex constraints).
 - Non-traditional feature models(multifeatures, evofm, etc)

Dependencies with others

- *Textual Variability Modeling Languages*
 - *XML*
 - *SPLOT*
 - *TEXTUAL*
 - *GRAMMAR*

Dependencies with others

- *Usage scenarios for a common feature model language*
 - *Sharing*
 - *Analyzing*
 - *Teaching*

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