PADERBORN UNIVERSITY

GERBIL PG

Summer Semester 2023

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DICE

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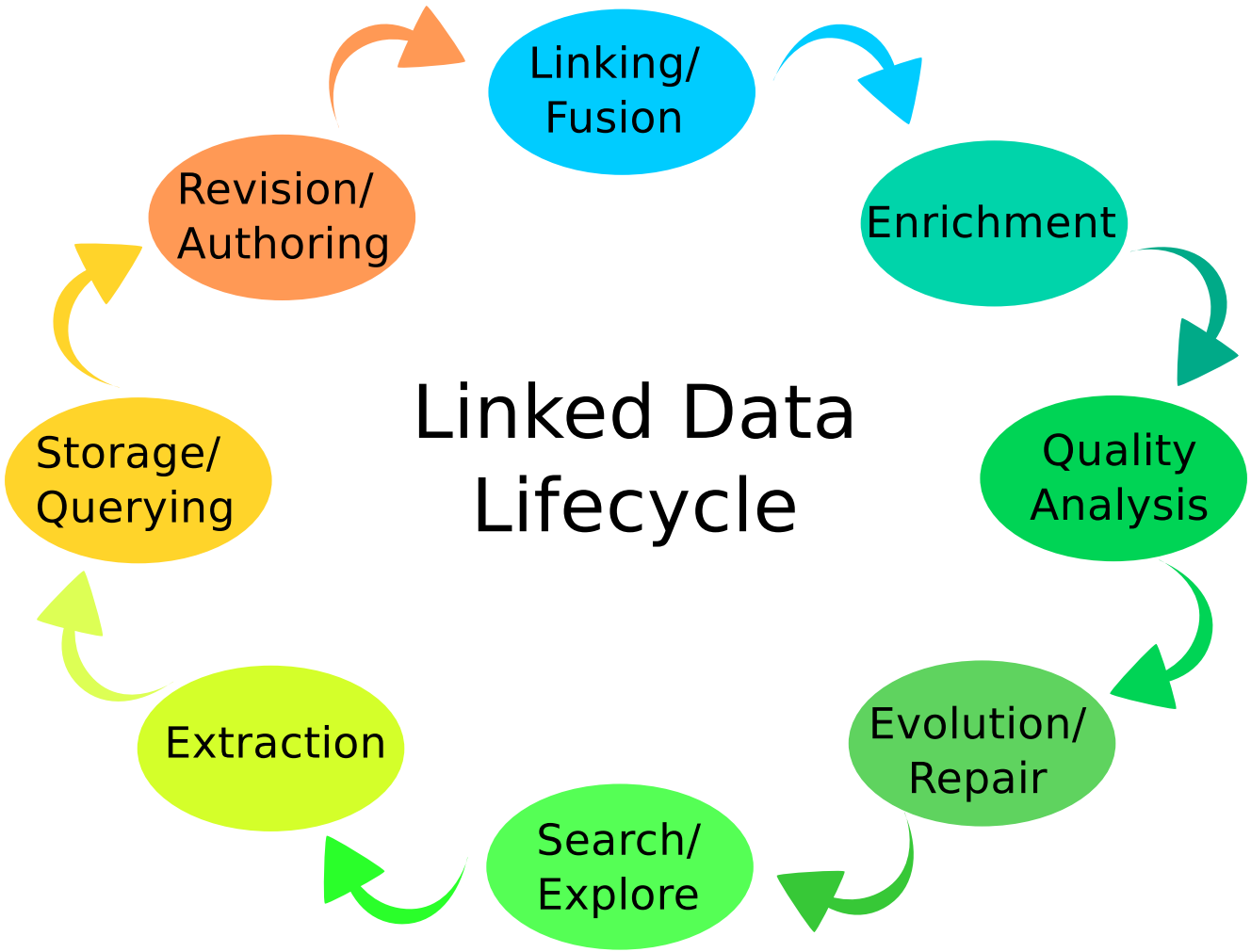
Linked Data Lifecycle



Benchmarking

Benchmarking? What is that?

Very briefly: Evaluate a system in a controlled environment and measure its effectiveness and efficiency.

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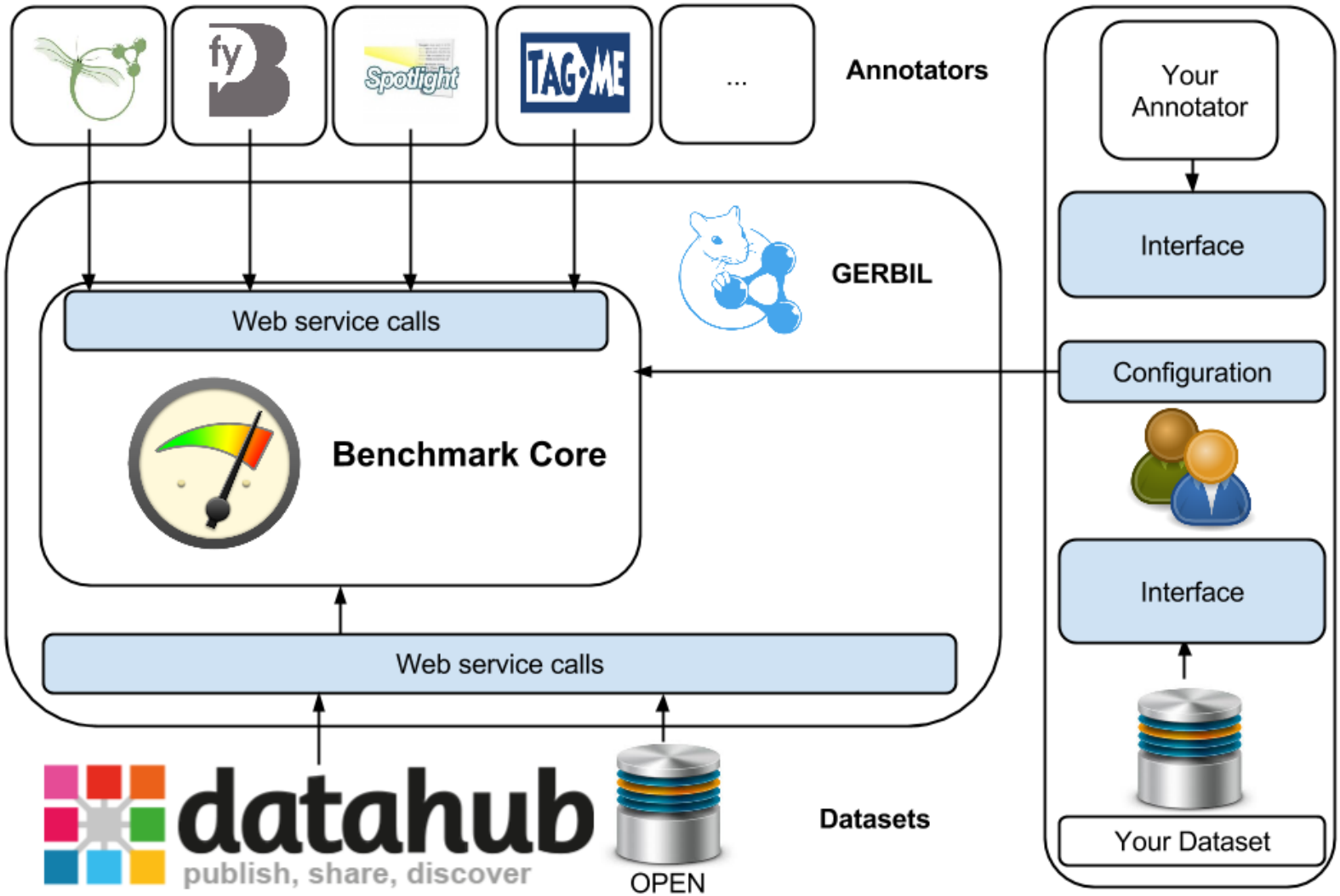
Knowledge Extraction



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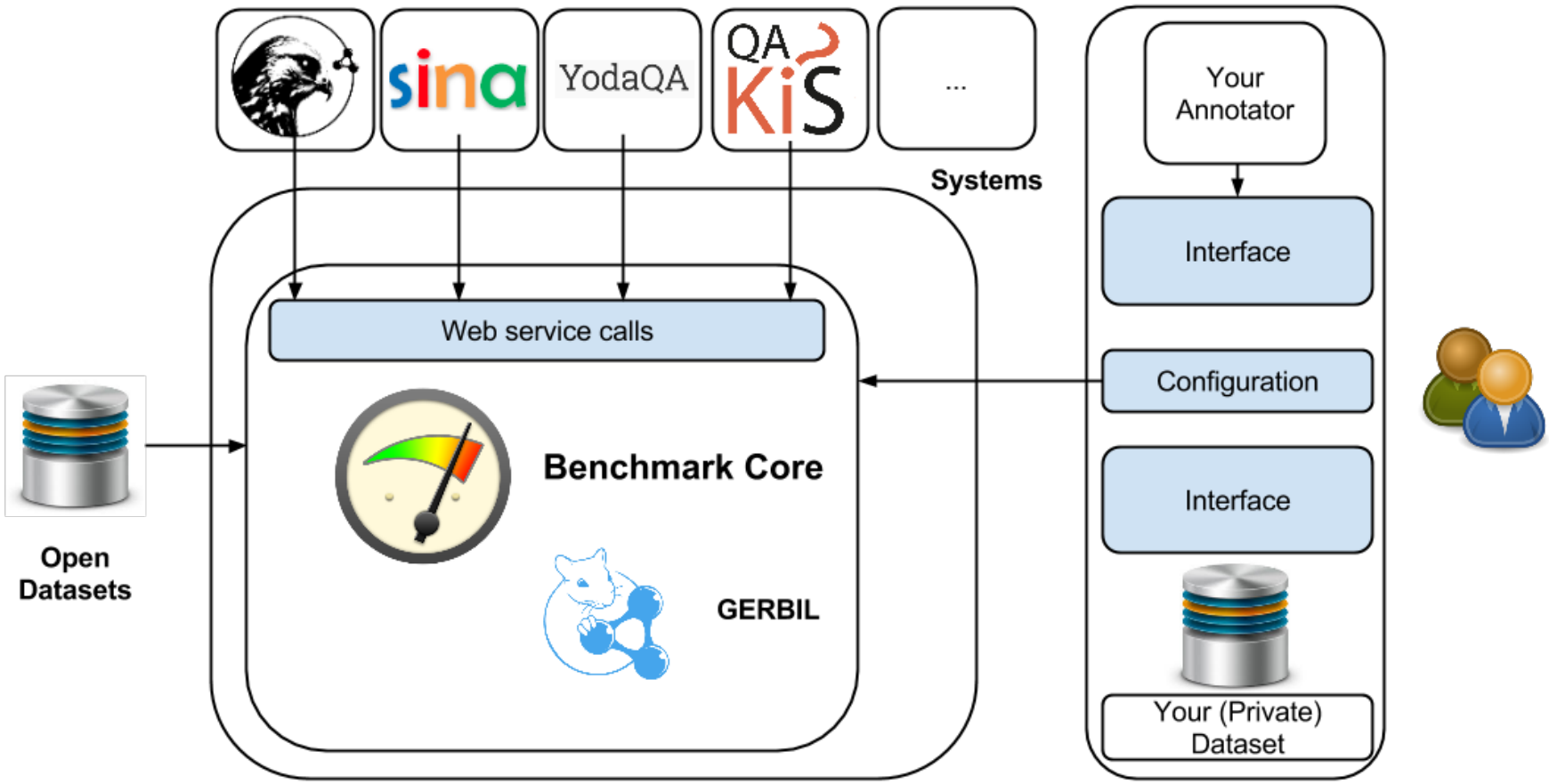
Question Answering



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Variants

Domain	Input	Output
Knowledge Extraction	Text	Structured data
Question Answering	Questions	Answers
Fact Checking	Facts	Veracity values
Machine Translation	Text	Text

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Knowledge Graph Embedding (Link Predication)	Graph	Embeddings

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Goals

Summary

- Problem: Development and maintenance of new GERBIL instances for different domains

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- Solution: Extend GERBIL to become a light-weight benchmarking platform

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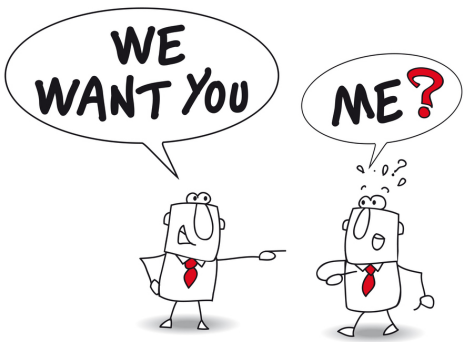
- Problem: Development and maintenance of new GERBIL instances for different domains
- Solution: Extend GERBIL to become a light-weight benchmarking platform

- Develop GERBIL 2.0
  - Basic platform implementation
  - Variants only extent the platform as needed
  - Usage of patterns like Dependency Injection
- Implement a new variant based on the new platform
  - Task related to Knowledge Graph Embeddings

We want



- Java / Maven
- Software development experience is beneficial
- Prior knowledge of RDF is beneficial
- Experience with git is beneficial
- Motivation to develop software

We Offer

- Real software: Participate in a "real" software development project
- Code Review: Regular code reviews from experienced developers
- Evaluation: Understand the importance of evaluation
- Master theses: Topics can be extended accordingly
- Publications: at top conferences (ISWC, ESWC, WWW)

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Further Information

Publications:

- M. Röder, R. Usbeck, and A. Ngomo: GERBIL – Benchmarking Named Entity Recognition and Linking consistently. 2018
- R. Usbeck, M. Röder, M. Hoffmann, F. Conrads, J. Huthmann, A. Ngomo, C. Demmler, and C. Unger: Benchmarking Question Answering Systems. 2019

Github projects:

- `https://github.com/dice-group/gerbil`

Technologies:

- Java / Maven
- Knowledge about RDF can be helpful