BUILDING A KNOWLEDGE GRAPH WITH AUTOMATICALLY ACQUIRED PUBLICATION CLASSIFICATIONS

Sven Blanck
GOAL

- Build a knowledge graph consisting of projects, publications, topics and authors
- Create Researcher Profiles
- Promote collaboration by finding researchers with similar research interests
- Provide good structure for detailed search queries
Building a knowledge graph with automatically acquired publication classifications

GRAPH CONCEPT

- Project
- Publication
- Author 1
- Author 2
- Author 3
- Topic
Building a knowledge graph with automatically acquired publication classifications

GRAPH CONCEPT

- Project
- Topic
- Publication
- Author
Building a knowledge graph with automatically acquired publication classifications

GRAPH CONCEPT – RESEARCHER PROFILE

= Project
= Topic
= Publication
= Author
Building a knowledge graph with automatically acquired publication classifications

GRAPH CONCEPT – RESEARCHER PROFILE

- Project
- Topic
- Publication
- Author
CATEGORY ASSIGNMENT

- Using Text Mining Methods for automatic Text Classification
- Available texts for examination:
  - Project titles, objectives and results
  - Publication titles, abstracts and partly full texts
- Structured Topic Modelling (STM) as clustering algorithm
  - Uses text as main input and meta data as covariable
- Lemmatize and filter english texts with Spacy

Artificial neural networks or connectionist systems are computing systems.
CATEGORY ASSIGNMENT

Cluster existing texts into 100 topics
CURRENT STATE DEMO

− Using EU funded projects
  − FP5: 1998 - 2002
  − FP6: 2002 - 2006
  − FP7: 2007 - 2013
  − Horizon2020: 2014 - 2020

− Applied STM to the projects

− Comparison of the German U15
LIVE-DEMO
FUTURE WORK

- Add projects funded by the German Research Foundation
- Add publications of Leipzig University
- Connect publications with the corresponding projects
- Expand current Topic model with automatically extracted keywords
KEEP IN TOUCH

Sven Blanck
Leipzig University
sven.blanck@zv.uni-leipzig.de