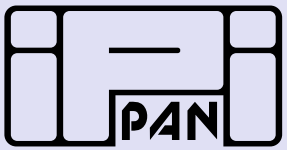
# Korpusomat.pl
# New functionalities and future development

Witold Kieraś Łukasz Kobyliński Maciej Ogrodniczuk
Michał Wasiluk Zbigniew Gawłowicz




INSTITUTE OF COMPUTER SCIENCE
POLISH ACADEMY OF SCIENCES
ul. Jana Kazimierza 5, 01-248 Warszawa

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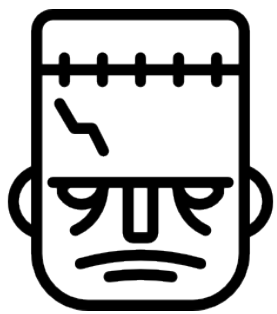
# What is Korpusomat?

Web application aimed at building

- automatically indexed and annotated
- searchable corpora
- from documents provided by the user,
- using modern NLP tools for Polish
- and equipped with intuitive user interface.



# For whom?

Mostly for linguists with limited technical skills:

- undergraduate and graduate students
- as well as individual reasearchers

interested in investigating

- sociolects in the Web,
- language of individual authors,
- language of niche and specialist press.

# Limitations

- Korpusomat has been around for nearly two years now.
- It gained some popularity but also quickly reached its limitations:
  - old search engine Poliqarp with no constant support,
  - no possibility to integrate other layers of annotation,
  - poorly scalable.
- A need for a significant reconstruction arose.
- Although the web interface remained the same, the majority of the components were either changed or at least updated.

KORPUSOMAT

NOWY KORPUS | MOJE KORPUSY | INFORMACJE | KONTAKT | PREFERENCJE | WYLOGUJ

# KORPUSOMAT

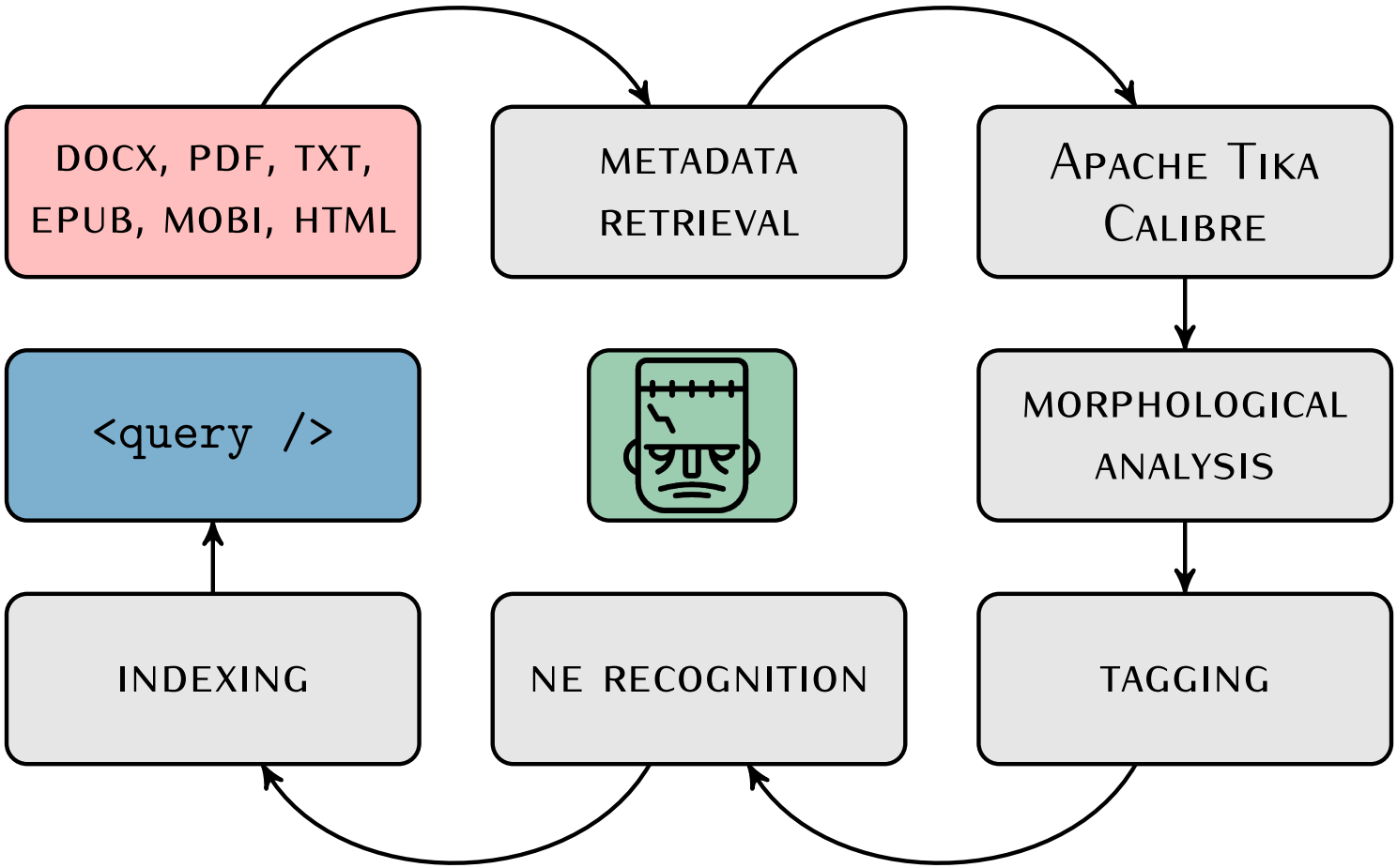
Utwórz własny korpus językowy

## MOJE KORPUSY JĘZYKOWE

## UTWÓRZ KORPUS

## PRZEŚLIJ OPINIĘ

# Workflow


DOCX, PDF, TXT,
EPUB, MOBI, HTML
METADATA
RETRIEVAL
Apache Tika
Calibre
<query />
MORPHOLOGICAL
ANALYSIS
INDEXING
NE RECOGNITION
TAGGING

# Morphosyntactic tagging

- Morfeusz 2 — morphological analyser [Woliński, 2014]
  - two custom dictionaries: SGJP and Polimorf,
  - frequent updates,
  - large portion of proper names added just recently.

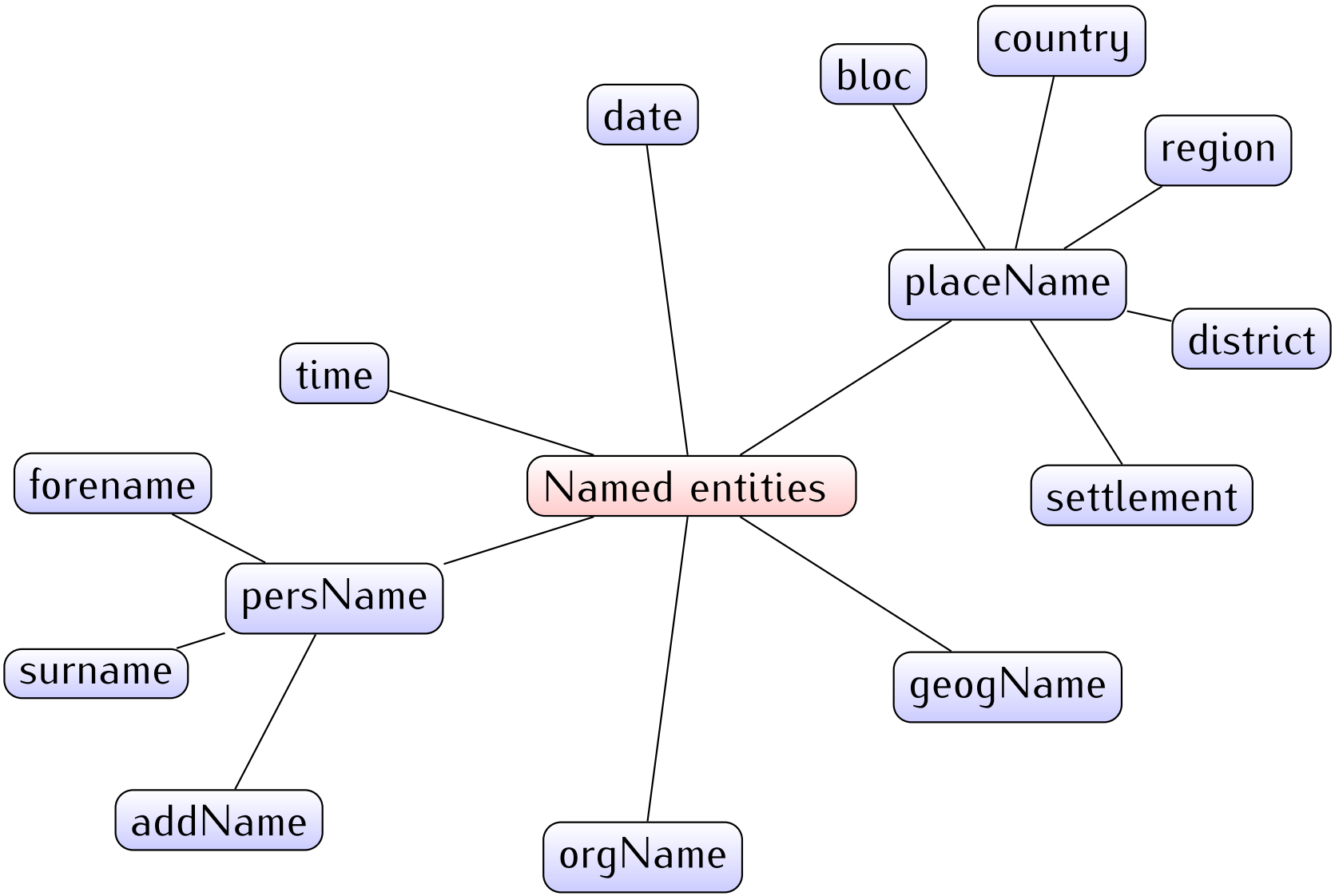
- Concraft 2 — morphosyntactic tagger [Waszczuk et al., 2018]
  - CRF-based,
  - tagging accuracy 92.6%,
  - well integrated with Morfeusz 2,
  - supports ambiguous segmentation,
  - performs sentencing.

# Named entities I

Liner2.6 — named entities classifier [Marcińczuk et al., 2013]

- CRF-based,
- classification model based on National Corpus of Polish,
- accuracy 81%,
- 3rd place in Poleval 2018 shared task,
- `https://github.com/CLARIN-PL/Liner2`

# Named entities II



# Multi Tier Annotation Search I

MTAS = Multi Tier Annotation Search [Brouwer et al., 2017]

- search engine created in Meertens Institute (Royal Netherlands Academy of Arts and Sciences),
- based on software developed by Apache Foundation:
  - Lucene — document search library,
  - Solr — server side application based on Lucene,
- actively developed, used in large projects such as Nederlab — $\approx$ 10 billion tokens large documents database,
- the development of MTAS is firmly situated in the CLARIN domain as part of the Dutch CLARIAH project.

# Multi Tier Annotation Search II

Crucial features:

- indexing of annotated documents and defining custom layers, including multi-word units,
- CQL (Corpus Query Language),
- incremental indexing — no need for processing the whole corpus after adding one document,
- scalability,
- filtering using metadata.

# Query examples

- `<ne="geogName" /> containing [pos="prep"]`
  - *Przy Agorze*
  - *U Huberta*
  - *Zamek Królewski na Wawelu*

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- `[orth="A.*"][orth="M.*"] fullyalignedwith <ne="persName" />`
  - *Adam Małysz*
  - *Adam Michnik*
  - *Antoni Macierewicz*

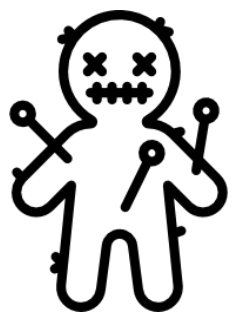
# Future functionalities

Near future:

- statistical tools for collocations,
- more visualizations,
- syntactic information based on dependecy parser.

Further plans:

- terminology extraction,
- more layers: sentiment analysis, word sense disambiguation,
- state-of-the-art NLP deep learning tools,
- platform for sharing users' custom corpora.



# Deployment scheme

So far Korpusomat served as a basis for deployment of various static corpora:

- Baroque Corpus o Polish
  `http://korba.pl`,
- Corpus of texts published between 1830 and 1918
  `http://korpus19.nlp.ipipan.waw.pl`,
- Corpus of Parliamentary Discourse
  `http://sejm.nlp.ipipan.waw.pl`,
- manually annotated gold-standard subcorpus of NCP
  `http://nkjp.nlp.ipipan.waw.pl/`

We hope for other successful deployments:

- integrated Diachronic Corpus of Polish?
- National Corpus of Polish 2.0?

# Conclusions

- Still a simple web application, but with some higher ambitions,
- with a mission for promoting NLP tools and techniques in Polish linguistic community.
- No intentions for developing new tools, focused rather on integrating and reusing the ones created in other projects.
- Feel free to test it at: `http://test.korpusomat.nlp.ipipan.waw.pl/`.
- Soon available at: `http://korpusomat.pl/`.

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