

Developing of Software Infrastructure for Research Domain at University of Novi Sad

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Outline

1 Project Overview

- University
- Goals

2 Results

- CRIS UNS
- PhD UNS
- Export of data
- Search
- Publications

3 Further Steps

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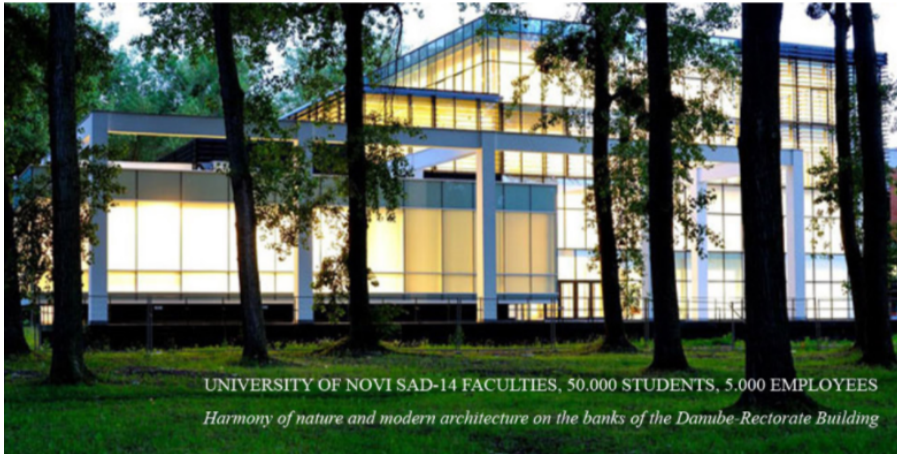
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University of Novi Sad

- The first faculty in Novi Sad was founded in 1954
- The University of Novi Sad was founded on 28th of June 1960
- Today, UNS represents an autonomous institution for education, science and arts

Rectorate building



UNIVERSITY OF NOVI SAD-14 FACULTIES, 50.000 STUDENTS, 5.000 EMPLOYEES

Harmony of nature and modern architecture on the banks of the Danube-Rectorate Building

University of Novi Sad Cities



About project

- Software infrastructure for educational domain - well developed, but lack of software infrastructure for science
- The DOSIRD UNS project has been started in 2009 - <http://dosird.uns.ac.rs/>
- The project team - professors, scientists, PhD students and librarians of the University of Novi Sad

Mission

- The main goal was to develop software infrastructure for research domain which will
 - Improve discoverability of the University scientific outputs
 - Improve rating of the University
 - Enhance scientific cooperation between the UNS researchers and researchers from all over the world
 - Save scientific heritage of the University of Novi Sad
 - Facilitate UNS research management

Specific goals

- Development of a research information system (CRIS UNS)
- Development of a digital library of Ph.D. dissertations defended at the University (PhD UNS)
- Development of the UNS institutional repository (not yet implemented, BEOPEN project started)
- Export data to the following networks of digital libraries and institutional repositories: DARTEurope, NDLTD, OATD, OpenAIRE+, etc
- Implementation of searching data through a web page and through a standardized protocol for Search/Retrieve via URL (SRU)

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CRIS UNS

- Current Research Information System of University of Novi Sad
- Under development since 2009
- Fulfills all local requirements prescribed by
 - the University
 - government of the Autonomous province of Vojvodina and
 - government of the Republic of Serbia
- In accordance with international well-known research domain standards and protocols
- Data about scientific outputs are stored in MARC 21 format
- Architecture of the system enables an easy integration with LIS and CRIS

Usage statistic

- 700 users
- 30,000 scientific publications

PhD UNS

- Digital library of dissertations defended at the University of Novi Sad
- Under development since 2010
- Integrated as part of CRIS UNS
- The first version was put into operation in 2013 - link

PhD submission

- Regulations of Ph.D. studies describes the current process of a Ph.D. dissertation submission
- This process has been modeled and implemented in CRIS UNS system - link

Open access license

- Copyrights on a Ph.D. dissertation belong to a student who wrote the dissertation, not to an institution in which the dissertation has been defended
- Therefore, the legal department of the University created a statement which allows students to publish its dissertations under open-access license - link
- Since December of 2014, Ph.D. candidates must sign open-access statement which is in accordance with the new Serbian Regulations on Higher Education

PhD linked publications

- More than 90% of PhD dissertations are in Serbian language
- Authors want to attract interest to their work to enhance their reputation both nationally and internationally
- At least one paper published in a journal belonging to the Web of Science JCR list
- Linking publications and PhD dissertations - paper, presentation

Usage statistic

- Metadata about all dissertation defended at the University since its foundation - 5,000
- Attached pdf files - 1,400
- Open-access pdf files - 1,250
- 250,000 downloads

Data Export Implementation

- The OAI-PMH protocol
- The OAICat library
- Format of data: MARC 21, Dublin Core, ETD-MS
- Only open-access PhD dissertation already defended can be exported - 1,000

Statistic

- NDLTD - 1,236
- NaRDuS - 1,249
- OATD - 1,248
- OPENAire+ - 1,126
- DARTEurope - 1,266

Search Implementation

- The Apache Lucene library
- Serbian Analyzer - two alphabets, stemmer
- JSF + RichFaces
- CRIS UNS search page - link
- PhD UNS search page - link

CRIS UNS search page

- Conference and journal papers, monographs, theses
- 3 search modes
- CQL profile for CRIS systems - paper
- English and Serbian UI

PhD UNS search page

- Basic and advanced search
- Filtering results by publication year, faculties, defended/non defended
- Sorting results
- Results format, word cloud, download link, linked publications
- English and Serbian UI

Early searchable

- A not defended PhD thesis is searchable
- But can't be exported via OAI-PMH

Automatic recommendation system

- Implemented in collaboration with Joel Azzopardi - paper
- Download logs and Collaborative approach for recommendation are used
- 5 top recommended dissertations
- Evaluate the approach using explicit feedback

Word cloud

- Implemented in collaboration with Georgia Kapitsaki - paper
- Visual result representation
- Users select type of results representation
- Evaluate approach using implicit feedback

Personalization of search

- Re-ranking result list using recommendation and relevance score
- Evaluate approach using implicit feedback

Multilingual search

- Serbian, Bosnian, Croatian and Montenegrin languages are derived from Serbo-Croatian language (ex-Yugoslav official language)
- However, people from ex-Yu republics can communicate using their native languages
- Research question: Can researcher from Croatia make a query in Croatian language and find Serbian PhD dissertation?
- The first result (in collaboration with Colin Layfield) - paper

Scientific publications

- 4 PhD theses
- 10+ journal papers
- 20+ conference papers
- 1 Monograph which is awarded as the best research paper in Computer Science field in 2011 by Serbian Informatics Society

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Plans for Future Development

- Interoperability with BEOPEN
- Personalization of search
- The system reengineering
- Consolidation of data

Questions

- Thank you for your attention!!!
- If you have any questions, please do not hesitate to
 - ask me now
 - ask me during the meeting breaks
 - contact me via email dragan.ivanovic@uns.ac.rs