

# Dragi Kocev

## Curriculum Vitae

Jožef Stefan Institute  
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### Work experience

- 2014- Visiting research fellow, Dept. of Informatics, Universita degli studi di Bari, Italy
- 2011-2014 Post-doctoral researcher, Dept. of Knowledge Technologies, Jožef Stefan Institute
- 2008-2011 Research assistant, Dept. of Knowledge Technologies, Jožef Stefan Institute

### Education

- 2011 **PhD in Computer Science**, IPS Jožef Stefan, Ljubljana, Slovenia  
Dissertation: *Ensembles for predicting structured outputs*
- 2005 **BSc in Engineering**, Faculty of Electrical Engineering, Skopje, Macedonia  
Thesis: *Inductive querying environment for learning predictive clustering trees*

### Projects

- 2014-2017 **MAESTRA**: Learning from Massive, Incompletely annotated, and Structured Data, FP7 FET Open Xtrack, grant no. ICT-2013-612944; *co-coordinator*
- 2014-2016 **HBP**: Human Brain Project, FET Flagship, grant no. 604102
- 2008-2012 **PHAGOSYS**: Systems biology of phagosome formation and maturation - modulation by intracellular pathogens, FP7 STREP, grant no. HEALTH-F4-2008-223451
- 2005-2008 **IQ**: Inductive Queries for Mining Patterns and Models, FP6 STREP, grant no. IST-2004-516169
- 2009-2012 Data mining for integrative data analysis in systemic biology, basic research project, ARRS, grant no. J2-2285
- 2013 Structured annotation, storage and retrieval of images and videos, bilateral research project between Slovenia and Macedonia
- 2009-2010 **GardenTox**: A decision support system for ensuring safe cultivation of vegetables in urban gardens, bilateral research project between Slovenia and France
- 2007-2008 **WAS**: Waste application and soil functioning: identification and classification of soil physico-chemical and biological parameters affecting plant nutrition, bilateral research project between Slovenia and France
- 2007-2008 Inductive Databases for Genomics and Proteomics, bilateral research project between Slovenia and Croatia
- 2007-2008 Knowledge Discovery for Ecological Modeling of Lake Ecosystems, bilateral research project between Slovenia and Macedonia

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## Scholarships and awards

### Scholarships

- 2007-2008 Scholarship for doctoral students from the Department of Knowledge Technologies, Jožef Stefan Institute, Ljubljana, Slovenia
- 2005-2009 Scholarship for doctoral studies from the Slovene Human Resources and Scholarship Fund *Ad Futura*, Ljubljana, Slovenia
- 2000-2005 Scholarship for talented university students from the Ministry of Education of Macedonia, Skopje, Macedonia
- 1997-2000 Scholarship for talented high school students from the Ministry of Education of Macedonia, Skopje, Macedonia

### Awards

- 2005 Diploma for graduation *summa cum laude* from the Faculty of Electrical Engineering, Skopje, Macedonia
- 2001-2005 Diploma for finishing each study year with high grade-point average at the Faculty of Electrical engineering, Skopje, Macedonia  
Certificates and diplomas for participation in state competitions in chemistry, mathematics and physics for high school students in Macedonia

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## Competitions

- 2013 ImageCLEF: Automatic modality classification of medical images - ranked 2<sup>nd</sup>
- 2013 ImageCLEF: Ad-hoc medical image retrieval - ranked 3<sup>rd</sup>
- 2010 ImageCLEF@ICPR 2010: Automatic image annotation - ranked 2<sup>nd</sup> and 3<sup>rd</sup> according to the two evaluation measures
- 2009 ImageCLEF 2009: Automatic annotation of medical images - ranked 3<sup>rd</sup>

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## Service to the community

### Program committee co-chair

- 2014 DS2014: 17<sup>th</sup> International Conference on Discovery Science, Bled, Slovenia, October 8-10, 2014

### Program committee member

- 2015 IJCAI 2015: International Joint Conference on Artificial Intelligence, Buenos Aires, Argentina, July 25-31, 2015. (Senior PC member)
- 2015 ECML PKDD 2015: European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, Porto, Portugal, September 7-11, 2015
- 2015 NFMCP2015: Workshop on New Frontiers on Mining Complex Patterns held at ECML/PKDD 2015, Porto, Portugal, September 7, 2015
- 2014 NFMCP2014: Workshop on New Frontiers on Mining Complex Patterns held at ECML/PKDD 2014, Nancy, France, September 19, 2014
- 2014 MLD09: First Workshop on Learning from Multi-Label Data held at ECML/PKDD 2009, Bled, Slovenia, September 7, 2009

### Organizing committee

- 2010 MLSB10: Fourth International Workshop on Machine Learning in Systems Biology, Edinburgh, Scotland, October 15-16, 2010
- 2009 MLSB09: Third International Workshop on Machine Learning in Systems Biology, Ljubljana, Slovenia, September 5-6, 2009

### Guest editor

- 2014-2015 Machine Learning Journal: Special issue on Discovery Science

### Reviewing

**Journals** Machine Learning, Information Sciences, Pattern Recognition, Data Mining and Knowledge Discovery, Knowledge and Information Systems, Neurocomputing, Engineering Applications of Artificial Intelligence, Bioinformatics, Remote Sensing, Ecological Informatics, IEEE Transactions on Knowledge and Data Engineering, Information Systems, Information Fusion, Integrated Computer-Aided Engineering, Journal of Computer Systems and Sciences, Expert Systems With Applications, Journal of Bioinformatics, Computers in Biology and Medicine, Journal of Pattern Recognition Research, International Journal of Electrical Power and Energy Systems, Protein and Peptide Letters, International Journal of Information Technology & Decision Making, International Journal of Bioinformatics Research and Applications, Acta geographica Slovenica (slo. Geografski Zbornik), Informatica (Ljub.), Organizacija

**Conferences** European Conference on Machine Learning / Principles and Practice of Knowledge Discovery in Databases (ECML/PKDD) 2007, 2008, 2011, 2012, 2013, 2014, 2015; Discovery Science (DS) 2008, 2009, 2013; National Conference on Artificial Intelligence (AAAI) 2008; SIAM International conference on Data Mining (SDM) 2008, 2009, 2013, 2014, 2015; International Conference on Inductive Logic Programming (ILP) 2009; European Conference on Artificial Intelligence (ECAI) 2010; International Conference on Knowledge Discovery in Databases (SIGKDD) 2011, 2012, 2013, 2014; International Conference on Intelligent Data Analysis (IDA) 2011; IEEE International Conference on Data Mining 2014, 2015; IEEE International Conference on Big Data 2014.

### Citations

The number of citations are calculated on 26.09.2015.

WoS/Scopus 275 (h-index: 7)  
GoogleScholar 604 (h-index: 11)

### Selected publications

This is a list of journal publications. For an exhaustive list of publications, please visit my homepage.

- Aleksandra Rashkovska, Dragi Kocev, and Roman Trobec. Non-invasive real-time prediction of inner knee temperatures during therapeutic cooling, *Computer Methods and Programs in Biomedicine*, in press, 2015
- Ivica Dimitrovski, Dragi Kocev, Suzana Loskovska, and Sašo Džeroski. Improving bag-of-visual-words image retrieval with predictive clustering trees, *Information Sciences*, in press, 2015
- Jurica Levatić, Dragi Kocev, Marko Debeljak, and Sašo Džeroski. Community structure models are improved by exploiting taxonomic rank with predictive clustering trees, *Ecological Modelling*, vol. 306, pp. 294-304, 2015
- Sašo Jančič, Polona Zalar, Dragi Kocev, Hans-Josef Schroers, Sašo Džeroski, and Nina Gunde-Cimerman. Halophily reloaded: new insights into the extremophilic life-style of *Walleimia* with the

- description of *Wallemia hederæ* sp. nov., *Fungal diversity*, in press, 2015
- Jurica Levatić, Dragi Kocev, and Sašo Džeroski. The importance of the label hierarchy in hierarchical multi-label classification, *Journal of Intelligent Information Systems*, vol. 45, no. 2, pp. 247-271, 2015
  - Ivica Dimitrovski, Dragi Kocev, Ivan Kitanovski, Suzana Loskovska, and Sašo Džeroski. Improved medical image modality classification using a combination of visual and textual features, *Computerized Medical Imaging and Graphics*, vol. 39, pp. 14-26, 2015
  - Janja Zajc, Sašo Džeroski, Dragi Kocev, Aharon Oren, Silva Sonjak, Rok Tkavc, and Nina Gunde-Cimerman. Chaophilic or chaotolerant fungi: a new category of extremophiles?, *Frontiers in Microbiology*, vol. 5, art. 708, 2014
  - Dragi Kocev, Celine Vens, Jan Struyf, and Sašo Džeroski. Tree ensembles for predicting structured outputs, *Pattern Recognition*, vol. 46, no. 3, pp. 817-833, 2013
  - Ivica Dimitrovski, Dragi Kocev, Suzana Loskovska, and Sašo Džeroski. Fast and efficient visual codebook construction for multi-label annotation using predictive clustering trees, *Pattern Recognition Letters*, vol. 38, pp. 38-45, 2013
  - Dragi Kocev, and Sašo Džeroski. Habitat modelling with single- and multi-target trees and ensembles, *Ecological Informatics*, vol. 18, pp. 79-92, 2013
  - Gjorgji Madjarov, Dragi Kocev, Dejan Gjorgjevikj, and Sašo Džeroski. An extensive experimental comparison of methods for multi-label learning, *Pattern Recognition*, vol. 45, no. 9, pp. 3084-3104, 2012
  - Ivica Dimitrovski, Dragi Kocev, Suzana Loskovska, and Sašo Džeroski. Hierarchical classification of diatom images using ensembles of predictive clustering trees, *Ecological Informatics*, vol. 7, no. 1, pp. 19-29, 2012
  - Jérôme Cortet, Dragi Kocev, Caroline Ducobu, Sašo Džeroski, Marko Debeljak, and Christophe Schwartz. Using data mining to predict soil quality after application of biosolids in agriculture, *Journal of Environmental Quality*, vol. 40, no.6, pp.1972-82, 2011
  - Ivica Dimitrovski, Dragi Kocev, Suzana Loskovska, and Sašo Džeroski. Hierarchical annotation of medical images, *Pattern Recognition*, vol. 44, no. 10-11, pp. 2436-2449, 2011
  - Reuben Keller, Dragi Kocev, and Sašo Džeroski. Trait-based risk assessment for invasive species: high performance across diverse taxonomic groups, geographic ranges and machine learning/statistical tools, *Diversity and Distributions*, vol. 17, no. 3, pp. 451-461, 2011
  - Marko Debeljak, Geoff R. Squire, Dragi Kocev, Cathy Hawes, Marc W. Young, and Sašo Džeroski. Analysis of time series data on agroecosystem vegetation using predictive clustering trees, *Ecological Modelling*, vol. 222, no. 14, pp. 2524-2529, 2011
  - Leander Schietgat, Celine Vens, Jan Struyf, Hendrik Blockeel, Dragi Kocev, and Sašo Džeroski. Predicting gene function using hierarchical multi-label decision tree ensembles, *BMC bioinformatics*, vol. 11, no. 2, str. 1-14, 2010
  - Dragi Kocev, Andreja Naumoski, Kosta Mitreski, Svetislav Krstić, and Sašo Džeroski. Learning Habitat Models for the Diatom Community in Lake Prespa, *Ecological Modelling*, vol. 221, no. 2, pp. 330-337, 2010
  - Dragi Kocev, Sašo Džeroski, Matt D. White, Graeme R. Newell, Peter Griffioen. Using single- and multi-target regression trees and ensembles to model a compound index of vegetation condition, *Ecological Modelling*, vol. 220, no. 8, pp. 1159-1168, 2009
  - Marko Debeljak, Dragi Kocev, William Towers, Mark Jones, Bryan Griffiths, and Paul Hallett. Potential of multi-objective models for risk-based mapping of the resilience characteristics of soils: demonstration at a national level, *Soil Use and Management*, vol. 25, no. 1, pp. 66-77, 2009