



VEDRANA VIDULIN

Data scientist and bioinformatician



Croatia



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LINKS

- vedranavidulin.com
- twitter.com/VedranaVidulin
- linkedin.com/in/VedranaVidulin
- github.com/vedranav

SKILLS

Data science

- supervised machine learning, structured output prediction, interactive data mining
- feature construction
- study design, statistical analysis of data
- Java, R, MySQL, Weka
- ggplot, d3.js, gnuplot

Bioinformatics

- Blast, Diamond
- databases: Gene Ontology, UniProt, eggNOG, NCBI genome, curatedMetagenomicData, Qiita
- PICRUSt

Other

- JavaScript, HTML5, CSS, Jekyll
- technical writing and presentation
- project management
- writing project proposal
- teaching and mentoring
- creative thinking, intellectual curiosity
- adaptability, perseverance
- lifelong learner

LANGUAGES

- English - fluent
- Slovenian - fluent
- Croatian - native

ABOUT ME

PhD with extensive experience in data science and bioinformatics. Entrepreneur in the making. My mission is to develop innovative software products for microbiologists to shed light on the roles of microorganisms in human health and environment.

EXPERIENCE

JOŽEF STEFAN INSTITUTE

Department of Knowledge Technologies
Ljubljana, Slovenia
Nov 2016 - May 2020

Research Fellow

Received an individual fellowship to continue work on the gene function prediction pipeline. Gained experience in project management and writing project proposals.

FACULTY OF INFORMATION STUDIES

Novo Mesto, Slovenia
Jun 2017 - May 2020

Assistant Professor

Taught "Web Programming" course for BSc students.

UNIVERSITY OF TRENTO

Laboratory of Computational Metagenomics
Trento, Italy
Dec 2017 - Apr 2018

Visiting researcher

Learned about metagenomic databases and pipelines. Wrote a project proposal.

RUDER BOŠKOVIĆ INSTITUTE

Computational Biology and Bioinformatics Group
Zagreb, Croatia
Mar 2014 - Oct 2016

Postdoctoral Fellow

Learned about bioinformatic databases and pipelines, genomics and microbiology. Developed a bioinformatic pipeline that annotates genes in bacteria and archaea with their biological functions.

JOŽEF STEFAN INSTITUTE

Department of Intelligent Systems
Ljubljana, Slovenia
Dec 2005 - Feb 2014

PhD student, Postdoctoral Fellow

Developed interactive data mining method. Performed analyses of macroeconomic and demographic data. Developed a method for automatic construction of a classifier that annotates web pages with genres. Had a role of operations manager in the eDoorman project - led a group that developed an intelligent agent mimicking behaviour of a human doorman.

EDUCATION

JOŽEF STEFAN INTERNATIONAL POSTGRADUATE SCHOOL

Ljubljana, Slovenia
Feb, 2012

PhD in Computer Science

Completed data science and artificial intelligence courses. The topic of thesis is an interactive data mining method that extracts credible knowledge from data by combining human expertise and machine learning.

UNIVERSITY OF RIJEKA

Rijeka, Croatia
Sep, 2005

BSc in Computer Science and Pedagogy

First encounter with data science through artificial intelligence and statistics courses. Wrote thesis on the topic of neural networks.

SELECTED PUBLICATIONS

- **Vidulin V.**, Džeroski S. (2020) Hierarchy decomposition pipeline: a toolbox for comparison of model induction algorithms on hierarchical multi-label classification problems. In *International Conference on Discovery Science* (pp. 486-501). Lecture Notes in Computer Science, vol 12323. Springer, Cham.
- Zhou N., ..., **Vidulin V.**, ..., Friedberg I. (2019) The CAFA challenge reports improved protein function prediction and new functional annotations for hundreds of genes through experimental screens. *Genome Biology*, 20, 244.
- Madjarov G. and **Vidulin V.**, Dimitrovski I., Kocev D. (2019) Web genre classification with methods for structured output prediction. *Information Sciences*, 503, 551-573.
- **Vidulin V.**, Šmuc T., Džeroski S., Supek F. (2018) The evolutionary signal in metagenome phyletic profiles predicts many gene functions. *Microbiome*, 6, 129.
- **Vidulin V.**, Šmuc T., Supek F. (2016) Extensive complementarity between gene function prediction methods. *Bioinformatics*, 32(23), 3645-3653.
- Brbić M., Piškorec M., **Vidulin V.**, Kriško A., Šmuc T., Supek F. (2016) The landscape of microbial phenotypic traits and associated genes. *Nucleic Acids Research*, 44(21), 10074–10090.
- Madjarov G. and **Vidulin V.**, Dimitrovski I., Kocev D. (2015) Web genre classification via hierarchical multi-label classification. In *International Conference on Intelligent Data Engineering and Automated Learning* (pp. 9-17). Lecture Notes in Computer Science, vol 9375. Springer, Cham.
- **Vidulin V.**, Bohanec M., Gams M. (2014) Combining human analysis and machine data mining to obtain credible data relations. *Information Sciences*, 288, 254-278.
- **Vidulin V.**, Gams M. (2011) Impact of high-level knowledge on economic welfare through interactive data mining. *Applied Artificial Intelligence*, 25(4), 267-291.

The number of times my papers have been cited can be seen at **Google Scholar Profile:**
scholar.google.com/citations?user=Jd8rFZYAAAAJ

SELECTED CONFERENCE TALKS AND POSTER PRESENTATIONS

- **Vidulin V.**, Džeroski S. (October, 28th 2019) Gene function prediction using Gene Ontology decomposition. Talk and poster at *Discovery Science*. Split, Croatia.
- **Vidulin V.**, Šmuc T., Džeroski S., Supek F. (July, 22nd 2019) The evolutionary signal in metagenome phyletic profiles predicts many gene functions. Talk and poster at *ISMB/ECCB*. Basel, Switzerland.
- **Vidulin V.**, Šmuc T., Džeroski S., Supek F. (June, 19th 2017) Automated gene function prediction using metagenome data. Poster at *Workshop in Advanced Computational Metagenomics*. Bari, Italy.
- Madjarov G. and **Vidulin V.**, Dimitrovski I., Kocev D. (October, 16th 2015) Web genre classification via hierarchical multi-label classification. Talk at *IDEAL*. Wroclaw, Poland.
- **Vidulin V.**, Šmuc T., Supek F. (July, 12th 2015) Predicting microbial gene function on a massive scale reveals extensive complementarity between genome context methods. Poster at *ISMB/ECCB*. Dublin, Ireland.
- **Vidulin V.**, Šmuc T., Supek F. (October, 8th 2014) Speed and accuracy benchmarks of large-scale microbial gene function prediction with supervised machine learning. Poster at *Discovery Science*. Bled, Slovenia.

AWARDS

- Best paper award at the *Intelligent Data Engineering and Automated Learning* (IDEAL) conference in 2015 for the paper Madjarov G. and **Vidulin V.**, Dimitrovski I., Kocev D. Web genre classification via hierarchical multi-label classification (Note: the first two authors are joint first authors)
- Rector's award for the highest academically ranked student in the class (undergraduate study)