europass

Marko Djukanovic

Phone number: (+387) 65699683 (Mobile) | **Email address:** marko.djukanovic@pmf.unibl.org |

Address: Bosnia and Herzegovina (Home)

WORK EXPERIENCE

01/10/2021 – CURRENT Banja Luka, Bosnia and Herzegovina

ASSISTANT PROFESSOR UNIVERSITY OF BANJA LUKA, FACULTY OF SCIENCES AND MATHEMATICS

Responsible for teaching the following courses:
Introduction to Databases Systems, Introduction to Operations Research, Relational Database Systems, Information Systems, Procedural programming, Introduction to Artificial intelligence

01/05/2017 – 01/05/2021 Vienna, Austria

UNIVERSITY RESEARCH ASSISTANT TU WIEN

Responsibilities at the Ph.D studies: attending courses, workshops, winter schools, workshops, conferences, and retreats

01/10/2016 – 30/09/2021 Banja Luka, Bosnia and Herzegovina

SENIOR TEACHING ASSISTANT UNIVERSITY OF BANJA LUKA, FACULTY OF NATURAL SCIENCES AND MATHEMATICS

with leave of absence (due to the Ph.D. duties at TU Wien, Austria)

Responsible for exercising the following courses:
Introduction to Databases Systems, Internet programming, Web-design, Basics of programming, Software engineering, Artificial intelligence, Information systems

15/02/2014 – 01/10/2016 Banja Luka, Bosnia and Herzegovina

TEACHING ASSISTANT UNIVERSITY OF BANJA LUKA

Responsible for exercising the following courses:
Introduction to Databases Systems, Internet programming, Web-design, Basics of programming, Software engineering, Artificial intelligence, Information systems

EDUCATION AND TRAINING

01/05/2017 – 30/04/2021 Wien, Austria

PH.D. IN COMPUTER SCIENCE (TU WIEN)

Artificial Intelligence, Mathematical Programming, and Optimization
Defended on May 5, 2021 (maxima cum laude)

Address 1040 , Wien, Austria | **Website** https://www.tuwien.at/index.php |

Thesis Exact and heuristic Approaches for Solving String Problems from Bioinformatics

01/10/2014 – 01/03/2016 Banja Luka, Bosnia and Herzegovina

MSC IN MATHEMATICS (APPLIED MATHEMATICS) Faculty of Sciences and of Mathematics

Numerical Mathematics, Applied Mathematics
Master thesis defended on March 23, 2016.

Final grade 10.0/10.0 | **Thesis** Numerical Construction of the Generalized Anti-Gauss Quadratures

01/10/2009 – 01/07/2013 Banja Luka, Bosnia and Herzegovina
BSC IN MATHEMATICS AND COMPUTER SCIENCE Faculty of Sciences and Mathematics

Final grade 9.87/10.00

14/01/2019 – 18/01/2019 Lisboa, Portugal
TRAINING: 8TH WINTER SCHOOL ON NETWORK OPTIMIZATION University of Lisboa, Portugal

21/02/2018 – 23/02/2018 Barelona, Spain
TRANINIG: METAHEURISTIC COURSE University fo Pompeu Fabra, Barcelona, Spain

Website http://blogbarg.upf.edu/metaheuristics-course/

LANGUAGE SKILLS

Mother tongue(s): **SERBIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	B2	C1	B2	B2	C1
GERMAN	A2	B1	A2	A1	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

ADDITIONAL INFORMATION

PUBLICATIONS

Journal publications

1. M Djukanovic, A Kartelj, C Blum (2023). Self-Adaptive Cmsa for Solving the Multidimensional Multi-Way Number Partitioning Problem. Expert Systems with Applications, 232: 120762 (IF 8.5)
2. A Kartelj, M Djukanovic (2023). RILS-ROLS: Robust Symbolic Regression via Iterated Local Search and Ordinary Least Squares. Journal of Big Data 10 (71), 1-28 (IF 10.1)
3.S Kapunac, A Kartelj, M Djukanovic (2023). Variable Neighborhood Search for Weighted Total Domination Problem and Its Application in Social Network Information Spreading. Applied Soft Computing 110387 (IF 8.7)
4. Djukanovic, M., Kartelj A., Matić D., Grbić M., Blum C., & Raidl, G. R. (2022). Graph search and variable neighborhood search for finding constrained longest common subsequences in artificial and real gene sequences. Applied Soft Computing, 122, 108844 (IF 6.725)
5.Nikolic, B., Djukanovic, M. & Matic, D. (2022). New mixed-integer linear programming model for solving the multidimensional multi-way number partitioning problem. Comp. Appl. Math. 41, 119 (IF 2.239)
6. Nikolic B, Kartelj A, Djukanovic M, Grbic M, Blum C, Raidl G. (2021) Solving the Longest Common Subsequence Problem
Concerning Non-Uniform Distributions of Letters in Input Strings. Mathematics, 9(13):1515. (IF 2.258)
7. Blum, C., Djukanovic, M., Santini, A., Jiang, H., Li, C. M., Manyà, F., & Raidl, G. R. (2021). Solving longest common subsequence
problems via a transformation to the maximum clique problem. Computers & Operations Research, 125, 105089. (IF 4.008)
8. Djukanovic, M., Berger, C., Raidl, G. R., & Blum, C. (2021). An A* search algorithm for the constrained longest common
subsequence problem. Information Processing Letters, 166, 106041. (IF 0.959)
9. Predojević M., Đukanović M., Grbić M., Dragan M. (2021). Can greedy-like heuristics be useful for solving the Weighted
Orthogonal Art Gallery Problem under regular grid discretization?. International Journal of Electrical Engineering and Computing.
5 (2): 77--85
10. Djukanovic, M., Raidl, G. R., & Blum, C. (2020). Finding Longest Common Subsequences: New anytime A* search results.
Applied Soft Computing, 95, 106499. (IF 6.725)

11. Djukanovic, M., Raidl, G. R., & Blum, C. (2020). Anytime algorithms for the longest common palindromic subsequence problem.
Computers & Operations Research, 114, 104827. (IF 4.008)
12. Djukanović, M. Solving the Facility location problem by using Variable Neighbourhood Search and Particle Swarm Optimization
(in Serbian), Mat - Kol, XXI (2)(2015), 117-129

Conference proceedings

1.Predojević, M., Kartelj, A., & Djukanović, M., Variable neighborhood search for solving the k-domination problem. In Proceedings of the Companion Conference on Genetic and Evolutionary Computation (pp. 239-242), Lisbon, Portugal, 2023.
2. Djukanović, M., Kartelj, A., Integrating Top-level Constraints into a Symbolic Regression Search Algorithm. In 2023 Second Serbian International Conference on Applied Artificial Intelligence (SICAAI), Kragujevac, Serbia, 2023. (Best paper award).
3. Djukanovic, M., Matic, D., Blum, C., & Kartelj, A. (2022). Application of A* to the Generalized Constrained Longest Common Subsequence Problem with Many Pattern Strings. In *International Conference on Pattern Recognition and Artificial Intelligence* (pp. 53-64). Springer, Cham.
4. Jaguzović, M., Grbić, M., Đukanović, M., and Matić. D. (2022) Identification of protein complexes by overlapping community detection algorithms: A comparative study. In Proceedings of 21st International Symposium INFOTEH-JAHORINA (INFOTEH). pp. 1-6, doi:10.1109/INFOTEH53737.2022.9751314.
5. Zec, T., Kartelj, A., Djukanović, M., Grbić, M., and Matić, D. (2021). Statistical analysis of correlation between weather parameters and new COVID-19 cases: a case study of Bosnia and Herzegovina. In Proceedings of 15th International Conference on INnovations in Intelligent SysTems and Applications (INISTA). pp. 1-6
6. Crnogorac,V., Grbić, M., Đukanović, M., and Matić, D. (2021). Clustering of European countries and territories based on cumulative relative number of COVID 19 patients in 2020. In Proceedings of 20th International Symposium INFOTEH-JAHORINA (INFOTEH). pp. 1-6, doi: 10.1109/ INFOTEH51037.2021.9400670.
7. Djukanovic, M., Berger, C., Raidl, G.R., Blum, C. (2020). On Solving a Generalized Constrained Longest Common Subsequence Problem . In Optimization and Applications. OPTIMA 2020. Lecture Notes in Computer Science(), vol 12422.Springer, Cham.
8. Horn, M., Djukanovic, M., Blum, C., Raidl, G.R. (2020). On the Use of Decision Diagrams for Finding Repetition-Free Longest Common Subsequences . In Optimization and Applications. OPTIMA 2020. Lecture Notes in Computer Science(), vol 12422. Springer, Cham.
9. Djukanovic, M., Raidl, G.R., Blum, C. (2020). A Heuristic Approach for Solving the Longest Common Square Subsequence Problem . In Computer Aided Systems Theory – EUROCAST 2019. EUROCAST 2019. Lecture Notes in Computer Science(), vol 12013. Springer, Cham.
10. Djukanovic, M., Raidl, G.R., Blum, C. (2019). A Beam Search for the Longest Common Subsequence Problem Guided by a Novel Approximate Expected Length Calculation . In Machine Learning, Optimization, and Data Science. LOD 2019. Lecture Notes in Computer Science(), vol 11943. Springer, Cham.
11. Djukanovic, M., Raidl, G.R., Blum, C. (2018). Exact and Heuristic Approaches for the Longest Common Palindromic Subsequence Problem . In Learning and Intelligent Optimization. LION 12 2018. Lecture Notes in Computer Science(), vol 11353. Springer, Cham.

CONFERENCES AND SEMINARS

10/09/2019 – 13/09/2019 – Certosa di Pontignano, Siena – Tuscany, Italy
LOD 2019: The Fifth International Conference on Machine Learning, Optimization, and Data Science A beam search for the longest common subsequence problem guided by a novel approximate expected length calculation

17/02/2019 – 22/02/2019 – Las Palmas de Gran Canaria, Spai
EUROCAST 2019: 17th International Conference on Computer Aided Systems Theory A heuristic approach for solving the longest common square subsequence problem

10/06/2018 – 15/06/2018 – Kalamata, Greece
LION 12: 12th International Conference, LION 12, Kalamata, Greece Exact and heuristic approaches for the longest common palindromic subsequence problem

28/09/2020 – 02/10/2020 – Petrovac, Montenegro
OPTIMA 2020: XI International Conference Optimization and Applications On Solving a Generalized Constrained Longest Common Subsequence Problem

HOBBIES AND INTERESTS

Hobbies Playing football, basketball, volleyball, bowlling

Learning new technologies
Watching movies, NBS league
Attending social events, stand up shows

OTHER SKILLS

Other skills

Work on Operating Systems:
Windows 7/10 and Linux (Ubuntu 16/18)

ACADEMIC AWARDS

Awards

1. Danubius Young Scientist Award 2022 winner for Bosnia and Herzegovina
2. Foundation "Dr Milan Jelić" scholarship for gifted students in the category doctoral students, 2020
3. Foundation "Dr Milan Jelić" scholarship for gifted students in the category undergraduate studies, 2010-2013 (three consecutive years)
4. Foundation of Ministry of Science and technological development, Higher Education, and Information society of Republic of Srpska: scholarship for gifted graduate students, 2014
5. "Golden Plaque": the best student award among the students of the Faculty of Sciences and Mathematics for the generation 2009.

COMPUTERS AND RELATED SKILLS

Computers and related skills

Programming (OOP and scripting) languages experience:

- NET-technologies: ASP, Oracle databases, SQL Server Management Studio (2012);
- PHP 7: Laravel 5 and Code Igniter frameworks and MySQL databases (intermediate);
- HTML5, CSS, Bootstrap, JavaScript (intermediate), JQuery (basics)
- Scripting languages: Batch, Matlab, Python (intermediate), R (basics)
- Experience with (Rest) API management (intermediate);
- C/C++, Java (intermediate)

Version Control Systems:

- GIT and SVN

Optimization / AI Tools / Machine Learning:

- Cplex and Gurobi (IBM), PuLP (Python), MHLIB
- Python libraries for ML: pyplotlib, numpy, pandas, sklearn, scipy, keras, tensorflow, seaborn

Other tools:

1. MySQL Workbench, PowerDesigner, XAMPP, Visual Paradigm

PROJECTS (INDUSTRY REFERENCES)

Projects (Industry reference)

PHP projects:

- E-conference system - ekonferencije.com (Code Igniter)
- Web Shop system - http://konel.ba/info (PHP, Laravel 5)
- B2B system - http://b2bevent.biz/en/, (Laravel 4)
- Agencija za bankarstvo: https://www.abrs.ba/ (Laravel 4)

ASP .NET projects:

- Virtual project (built for the Banja Luka municipality)

APIs for Mobile apps:

- DEMI conference: https://play.google.com/store/apps/details?id=bslz.demi&hl=en
- BSLZ conference: https://play.google.com/store/apps/detailsid=bslz2017.novo&hl=en
- Vines Montenegro: https://play.google.com/store/apps/details?id=vina.crnagora&hl=en

Self-initiated projects:

- Some Machine learning projects which can be checked at the following repo:
- https://github.com/markodjukanovic90/ML_prediction

SEMINARS

Chief of the Computer science seminar at the Faculty of Sciences and Mathematics, Univeristy of Banja Luka

https://matinf.pmf.unibl.org

REVIEWERS FOR

Journals

1. Computers & Operations research
2. Information Sciences
3. BMC Bioinformatics
4. Journal of Heuristics
5. Mathematics
6. Journal of Big Data
7. Soft Computing
8. Discrete Mathematics and Theoretical Computer Science

Conferences

1. STES 2022
2. STES 2021
3. LION17

SCIENTIFIC SITES PROFILE EVALUATION

Evaluation

1. Google scholar: https://scholar.google.com/citations?user=GO5kX8AAAAAJ&hl=sr&oi=ao - citations: 109; h-index: 6; i10-index: 4 (accessed on Sep 23, 2023)
2. https://scholar.google.com/citations?user=GO5kX8AAAAAJ&hl=sr&oi=ao - citations: 94; h-index: 7; RIS: 59.4 (accessed on Sep 23, 2023)
3. Most cited paper: Djukanovic, M., Raidl, G. R., & Blum, C. (2020). Anytime algorithms for the longest common palindromic subsequence problem. *Computers & Operations Research*, *114*, 104827. (19 citations)