

# SANDRO RADOVANOVIĆ

sandro.radovanovic@fon.bg.ac.rs • <https://sandrord.netlify.app/> • +381-69-8893274

---

*My work focuses on designing and developing machine learning models and decision support systems, as well as employing concepts from decision theory in real-world applications. I am particularly interested in enforcing fairness and justice in algorithmic decision making, as well as developing systems that directly benefit people.*

## EDUCATION

---

- University of Belgrade** 2013 - 2021  
Faculty of Organizational Sciences, Belgrade, Serbia  
PhD of Engineering in Information Systems and Technologies - Machine Learning  
GPA: 10.00/10.00
- University of Belgrade** 2012 - 2013  
Faculty of Organizational Sciences, Belgrade, Serbia  
MSc of Engineering in Information Systems and Technologies - Business Intelligence  
GPA: 10.00/10.00
- University of Belgrade** 2008 - 2012  
Faculty of Organizational Sciences, Belgrade, Serbia  
BSc of Engineering in Information Systems and Technologies  
GPA: 9.43/10.00

## TEACHING AND RESEARCH EXPERIENCE

---

- Assistant Professor at University of Belgrade** Dec 2021 - Present  
Faculty of Organizational Sciences, Belgrade, Serbia  
Bachelor Studies: Decision Theory, Business Intelligence, Decision Support Systems, and Machine Learning.  
Master Studies: Business Intelligence Systems, Data Warehouses, Data Mining, Design of Machine Learning Algorithms, Data Science, and Advanced Machine Learning.
- Visiting Postdoc Researcher at Cambridge Center for AI in Medicine** Feb 2023 - Apr 2023  
University of Cambridge, Cambridge Center for AI in Medicine  
Working on Variational Autoencoders, Generative Adversarial Network, and Diffusion Models for Synthetic Data Generation.
- Teaching Assistant at University of Belgrade** Dec 2019 - Dec 2021  
Faculty of Organizational Sciences, Belgrade, Serbia  
Bachelor Studies: Decision Theory, Business Intelligence, Decision Support Systems, and Machine Learning.  
Master Studies: Business Intelligence Systems, Data Warehouses, Data Mining, and Design of Machine Learning Algorithms.
- Teaching Associate at University of Belgrade** Dec 2017 - Dec 2019  
Faculty of Organizational Sciences, Belgrade, Serbia  
Bachelor Studies: Decision Theory, Business Intelligence, Decision Support Systems, and Machine Learning.
- Student Researcher at University of Belgrade** Oct 2013 - Nov 2017  
Faculty of Organizational Sciences, Belgrade, Serbia  
Performed research in: Decision Theory, Business Intelligence, Decision Support Systems, and Machine Learning.

## WORK EXPERIENCE

---

- Short Term Consultant at World Bank Group (*Part time*)** Jan 2023 - Present  
Collection, review, and consolidation of data for the database for the decision-making predictive models for assessing the potential impact of transport investments and policies on economic and human capital output at the local level.
- Machine Learning Engineer at Saga (*Part time*)** Sep 2021 - May 2022  
Designing, developing and implementing machine learning models, and recommendation systems. Involved with data extraction, data preparation, descriptive and predictive modeling, and deep learning. Using SQL Server, Python, Spark, and PyTorch.
- Machine Learning Engineer at Saga (*Part time*)** Nov 2018 - Mar 2020  
Designed, developed and implemented descriptive and predictive machine learning models. Involved with data extraction, data preparation, descriptive and predictive modeling. Used SQL Server, Hadoop, Python, and Spark.

**Team Lead for Design and Implementation of Information Systems at Government of the Republic of Serbia** Nov 2017 - Dec 2017

Designed, developed, and implemented information systems and registries for the Governmental agencies and eGovernment. Involved in all stages of software development. Worked on: Requirement analysis, Writing technical documentation, Database design (SQL Server), Database Optimization and Administration, Software Architecture and Design, Software Development (C#, VB, ASP.NET and Java), Report development, Software testing, Deployment, and Maintenance.

**Software Developer at Government of the Republic of Serbia** Oct 2012 - Oct 2017

Designed, developed, and implemented information systems and registries for the Governmental agencies and eGovernment. Involved in all stages of software development. Worked on: Requirement analysis, Writing technical documentation, Database design (SQL Server), Database Optimization and Administration, Software Architecture and Design, Software Development (C#, VB, ASP.NET and Java), Report development, Software testing, Deployment, and Maintenance.

**Short Term Consultant at World Bank Group (*Part time*)** Mar 2016 - Aug 2016

Worked on the project Serbian School Network Analysis: Vertical review of Ministry of Education, Science and Technological Development. Performed 1) Data cleansing: Documenting the databases; Writing R and SQL scripts for data consistency checks; Checking data integrity with treasury and statistical office data; 2) Data analysis: Conducting statistical and econometric analysis; Data mining, Pattern recognition; Writing R scripts for data analysis; Developing detailed school level analysis; and 3) Reporting: Creating SQL queries for MoESTD Open Data platform; Creating various reports for other stakeholders (i.e. UNESCO).

SELECTED PUBLICATIONS (FULL LIST IS IN A SEPARATE DOCUMENT)

---

- Delibašić, B., **Radovanović, S.**, Jovanović, M., Obradović, Z., Suknović, M. & Lojić, R. (2022). A study on ski groups size and their relationship to the risk of injury. Proceedings of the Institution of Mechanical Engineers, Part P: Journal of Sports Engineering and Technology, pp. 1-12. August 2022. Sage Publishing. [link](#)
- Vukićević, A., Vukićević, M., **Radovanović, S.** & Delibašić, B. (2022) BargCrEx: A System for Bargaining Based Aggregation of Crowd and Expert Opinions in Crowdsourcing. Group Decision and Negotiation. Springer. [link](#)
- **Radovanović, S.**, Savić, G., Delibašić, G., Suknović, M. (2021) FairDEA - Removing Disparate Impact from Efficiency Scores. European Journal of Operational Research. [link](#)
- Petrović, A., Nikolić, M., **Radovanović, S.**, Delibašić, B., Jovanović, M. (2021) FAIR: Fair Adversarial Instance Re-weighting. Neurocomputing. [link](#)
- **Radovanović, S.**, Petrović, A. Delibašić, B. & Suknović, M. (in press) A Fair Classifier Chain for Multi-label Bank Marketing Strategy Classification. International Transactions in Operational Research. [link](#)
- Rančić, S., **Radovanović, S.**, & Delibašić, B. (2021, May). Investigating Oversampling Techniques for Fair Machine Learning Models. In International Conference on Decision Support System Technology (pp. 110-123). Springer, Cham. [link](#)
- **Radovanović, S.**, Delibašić, B., Suknović, M (2021). Predicting Dropout in Online Learning Environments. Computer Science and Information Systems – ComSIS, 18(3), pp. 957-978. ComSIS Consortium. [link](#)
- **Radovanović, S.**, Petrović, A., Delibašić, B., Suknović, M. (2020). Enforcing fairness in logistic regression algorithm. In Proceedings of 2020 International Conference on INnovations in Intelligent SysTems and Applications (INISTA), August 24-26, 2020. Novi Sad, Serbia, pp. 1-7. [link](#)
- **Radovanović, S.**, Delibašić, B., Jovanović, M., Vukićević, M., Suknović, M. (2019) A Framework for Integrating Domain Knowledge in Logistic Regression with Application to Hospital Readmission Prediction. International Journal on Artificial Intelligence Tools, 28(6), 19 pages. [link](#)
- Delibašić B., **Radovanović S.**, Jovanović M.Z., Suknović M. (2020) Improving Decision-Making in Ski Resorts by Analysing Ski Lift Transportation—A Review. In: Mladenović N., Sifaleras A., Kuzmanović M. (eds) Advances in Operational Research in the Balkans. Springer Proceedings in Business and Economics. Springer, Cham. [link](#)
- **Radovanovic, S.**, Delibasic, B., Suknovic, M., & Matovic, D. (2019). Where will the next ski injury occur? A system for visual and predictive analytics of ski injuries. Operational Research, 1-20. [link](#)
- Perović, V., Sumonja, N., Marsh, L. A., **Radovanovic, S.**, Vukicevic, M., Roberts, S. G. E., Veljkovic, N. (2018) IDPPi: Protein-Protein Interaction Analyses of Human Intrinsically Disordered Proteins. Nature Scientific Reports 2018 (8), Article ID 10563. Pages 10. [link](#)

- **Radovanović, S.**, Delibašić, B., Jovanović, M., Vukićević, M., Suknović, M. (2018) Framework for integration of domain knowledge into logistic regression. In Proceedings of the 8th International Conference on Web Intelligence, Mining and Semantics (WIMS '18), (Article No. 24). Rajendra Akerkar, Mirjana Ivanović, Sang-Wook Kim, Yannis Manolopoulos, Riccardo Rosati, Miloš Savić, Costin Badica, and Miloš Radovanović (Eds.). ACM, New York, NY, USA, Article 24, 8 pages. [link](#)
- Rakić, M., Galidno-Moreno, P., Monje, A., **Radovanović, S.**, Wang, H-L., Cochran, D., Sculean, A., Canullo, L. (2017) How frequently does Peri-implantitis occur? A Systematic Review and Meta-Analysis. *Clinical Oral Investigations*. [link](#)
- Jovanović, M., **Radovanović, S.**, Vukićević, M., Van Poucke, S., & Delibašić, B. (2016). Building interpretable predictive models for pediatric hospital readmission using tree-lasso logistic regression. *Artificial Intelligence in Medicine*, 72(9) (pp. 12-21). Elsevier Publishing. [link](#)

## TALKS

---

- Invited talk on *Fairness in Algorithm Decision-making at AI4WorkplaceSafety*.
- *Algorithm design for fair decision making* at Association of Computer Scientists of University of Belgrade - June 2022.
- *Effects of affirmative measures in algorithmic decision-making* at Carl Friedrich von Weizsäcker Center Eberhard Karls Universität Tübingen - May 2021.
- *A Weighting Based Adversarial Approach to Fairness in Machine Learning* at a bi-weekly meeting of Discrimination and Equity in Algorithmic Decision-making working group of Mechanism Design 4 Social Good - April 2021.
- *Prevention of unwanted discrimination in machine learning models* at IEEE Chapter Computer Science (CO-16) organized by Mathematical Institute of the Serbian Academy of Sciences and Arts - November 2020.
- *White Box Clustering in R* at the professional conference of R users SatRday - October 2018.
- *Integration of Domain Knowledge into Machine Learning Algorithms – Applications in Healthcare* at NSF US-Serbia & West Balkan Data Science Workshop in a section New Voices Short Talks aimed for rising stars to present their research - August 2018.

## RESEARCH PROJECTS

---

- Data Science research team member - *Monitoring and Indexing Peace and Security in the Western Balkans - MIND*. Science Fund of the Republic of Serbia. January 2022 - January 2025.
- Research team member - *Accelerating the transition towards Edu 4.0 in HEIs – TEACH4EDU4*. Erasmus+. November 2020 - May 2023.
- Research team member - *Modeling decision-making in complex socio-technical environments*. Office for Naval Research (ONR) Global Grant. November 2018 - March 2022.
- PhD student member - *Infrastructure for electronically supported learning in Serbia*. Ministry of Education, Science, and Technological Development. November 2018 - December 2020.
- Research team member - *Information Security Services Education in Serbia*. Erasmus+ KA2. April 2018 - October 2020.
- Research team member - *Predicting patient's future health state: Development and deployment of fast, effective, and interpretable algorithms for healthcare*. SNSF Joint Research project (SCOPES). October 2014 - October 2016.

## AWARDS AND SCHOLARSHIPS

---

- Teaching excellence awards (either as teaching assistant or assistant professor) at University of Belgrade, Faculty of Organizational Sciences - Winter Semester 2018/19, Summer Semester 2019/20, Summer Semester 2020/21, Winter Semester 2021/22, and Summer Semester 2021/22.
- Went to *Huawei Seeds for the Future 2019* program for excellent students in Information and Communication Technologies area. Training conducted in Beijing and Shenzhen, China.
- Best paper with a student presenter at *ICDSSST 2019 – International Conference on Decision Support System Technology*
- Went on study stay to *Berlin School of Economics and Law* in 2017 on topic *Cooperative studies in Germany* as a rewarded student.

## Organizations

- Board of Assistant member at EURO Working Group – Decision Support Systems from May 2018.
- Social media (Communication team) and Algorithms, Law, and Policy (previously Discrimination and Equity in Algorithmic Decision-making) working group member in Mechanism Design 4 Social Good from December 2020.
- From March 2023 elected from the Government to represent Serbia at GPAI Responsible AI Working Group.

## Conference Organization

- One of the organizer of the Algorithmic Fairness in Artificial intelligence, Machine learning and Decision making (AFair-AMLD) Workshop at the SIAM International Conference on Data Mining (SDM23).
- Registration and Grants co-chair, Virtual co-chair, and Social media co-chair at *ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO '22)*. October 2022.
- Organizing Committee member (Editorial Board) at *XVIII International Symposium of Organizational Sciences - SymOrg 2022*. June 2022.
- Mini-track session co-chair on *Fairness in Algorithmic Decision Making at 55th Hawaii International Conference on System Sciences*. January 2022.
- Diversity and Inclusion co-chair and Registration and Grants co-chair at *ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization (EAAMO '21)*. October 2021.
- Organizing team member at *International Conference on Decision Support System Technology (ICDSST 2019)*. May 2019.
- Technical, Web Support and Virtual Conference Coordinator at *NSF US-Serbia & West Balkan Data Science Workshop 2018*. August 2018.
- Local organizer at *South-East European Forum on Data Science 2016, Computational Decision Making and Data Science workshop 2017 and 2018*.

## Reviewing

- Reviewer for journals: *European Journal of Operational Research, Computer Science and Information Systems, Big Data, ACM Transactions on Knowledge Discovery from Data, IEEE Journal of Biomedical and Health Informatics, Journal of Sports Sciences, InfoM – Journal for information technologies and multimedia systems, International Journal of Decision Support System Technology (IJDSST), and Management - Journal of Sustainable Business and Management Solutions in Emerging Economies*.
- Editorial Review Board member of the *International Journal of Decision Support System Technology (IJDSST)* from January 2021.
- Reviewer (Program Committee Member) at conferences *ECML PKDD 2022, International Conference on Decision Support System Technology (ICDSST 2020, ICDSST 2021, ICDSST 2022)*, *Hawaii International Conference on System Sciences (HICSS) HICSS-55 2022, HICSS-56 2023*, and *Central European Conference on Information and Intelligent Systems (CECIIS 2021, CECIIS 2022)*.

## Summer School Organization

- *FON Summer School 2022 - Unleash Management Skills in Digital & Data-Driven Business* - Aug 2022
- *Machine Learning Summer School* (University of Žilina, Slovakia) - Sep 2021 and Sep 2022.
- *Data School*, Perast, Montenegro, Aug 2018 & Aug 2019.