



# Marija Jelić Milutinović, PhD

## Curriculum Vitae

### PERSONAL DATA

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Address: Studentski trg 16, 11000 Belgrade, Serbia

### EDUCATION

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- 2021 **PhD in Mathematics**  
Department of Topology, Faculty of Mathematics, University of Belgrade  
Thesis: Combinatorial topology and graph complexes  
Advisor: Prof. dr Siniša Vrećica, GPA: 10,00 (out of 10,00)  
Award for thesis: Annual Award of the Mathematical Institute of the Serbian Academy of Sciences and Arts in the field of mathematics and mechanics for PhD Students in 2021.
- 2013 **MSc in Mathematics**  
Department of Topology, Faculty of Mathematics, University of Belgrade  
Thesis: Equivariant index theory  
Advisor: Prof. dr Siniša Vrećica, GPA: 10,00 (out of 10,00)
- 2012 **BA in Mathematics**  
Faculty of Mathematics, University of Belgrade  
GPA: 10,00 (out of 10,00)  
**Award: „The best student of generation at the University of Belgrade“**  
Award: „The best student of generation at the Faculty of Mathematics“
- 2004-2008 Mathematical Grammar School, Belgrade  
(„Matematička gimnazija“- school with the High National Distinction Status)  
Graduated as „**The best student of generation**“

### APPOINTMENTS

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- 2021-present **Assistant Professor**, Faculty of Mathematics, University of Belgrade  
Courses held: Topology A, Topology B, Convex Analysis, Obvious topology, Mathematics 1 (for Chemistry), Mathematical Analysis 2 (for Informatics)
- 2015-2021 **Teaching Assistant**, Faculty of Mathematics, University of Belgrade  
Courses held: Topology A, Topology B, Algebraic topology, Mathematical Analysis 1A, 1B, 1, and 3; Obvious topology, Master courses in Topology
- 2016 Fall **Research Fellow at the Institute for Computational and Experimental Research in Mathematics**, ICERM - Brown University, Providence, United States of America
- 2012-2015 **Teaching Associate**, Faculty of Mathematics, University of Belgrade  
Courses held: Topology A, Topology B, Algebraic topology, Mathematical Analysis 1A and 1B, Obvious topology
- 2012-2014 Teaching special mentoring program class of gifted students, Mathematical Grammar School, Belgrade

### RESEARCH INTEREST

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Combinatorial Topology, Algebraic Combinatorics, Discrete Geometry, Applied Algebraic Topology

## PUBLICATIONS

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- [1] *"Topology of cut complexes of graphs II"*  
SIAM Journal on Discrete Mathematics 39(2) (2025), 1123-1157.  
Authors: M. Bayer, M. Denker, M. Jelić Milutinović, S. Sundaram, and L. Xue.
- [2] *"Topology of cut complexes of graphs"*  
SIAM Journal on Discrete Mathematics 38(2) (2024), 1630-1675.  
Authors: M. Bayer, M. Denker, M. Jelić Milutinović, R. Rowlands, S. Sundaram, and L. Xue.
- [3] *"Total Cut Complexes of Graphs"*  
Discrete & Computational Geometry (2024)  
Authors: M. Bayer, M. Denker, M. Jelić Milutinović, R. Rowlands, S. Sundaram, and L. Xue.
- [4] *"The Tripartite-Circle Crossing Number of Graphs With Two Small Partition Classes"*  
Computing in Geometry and Topology 3(1)(2024), 9:1-9:21.  
Authors: C. Camacho, S. Fernández-Merchant, M. Jelić Milutinović, R. Kirsch, L. Kleist, E. Bailey Matson, J. White
- [5] *"Perfect Matching Complexes of Honeycomb Graphs"*  
Electronic Journal of Combinatorics, 30(2) P2.45 (2023)  
Authors: M. Bayer, M. Jelić Milutinović, and J. Vega.
- [6] *"General polygonal line tilings and their matching complexes"*  
Discrete Mathematics, vol. 346, Issue 7 (2023), 113428  
Authors: M. Bayer, M. Jelić Milutinović, and J. Vega.
- [7] *"On the Topology of Cut Complexes of Graphs"*  
Séminaire Lotharingien de Combinatoire 89B.8 (2023) Proceedings of the 35th Conference on Formal Power Series and Algebraic Combinatorics  
Authors: M. Bayer, M. Denker, M. Jelić Milutinović, R. Rowlands, S. Sundaram, and L. Xue.
- [8] *"Matching complexes of trees and applications of the matching tree algorithm"*  
Annals of Combinatorics 26 (2022), 1041-1075  
Authors: M. Jelić Milutinović, H. Jenne, A. McDonough, and J. Vega.
- [9] *"Bounding the tripartite-circle crossing number of complete tripartite graphs"*  
Journal of Graph Theory (2021), 1-23, <https://doi.org/10.1002/jgt.22763>.  
Authors: C. Camacho, S. Fernández-Merchant, M. Jelić Milutinović, R. Kirsch, L. Kleist, E. Bailey Matson, J. White.
- [10] *"Manifold Matching Complexes"*  
Mathematika 66(2020), 973-1002  
Authors: M. Bayer, B. Goeckner, and M. Jelić Milutinović.
- [11] *"Combinatorics of unavoidable complexes"*  
European Journal of Combinatorics 83(2020), 103004  
Authors: M. Jelić Milutinović, D. Jojić, M. Timotijević, S. T. Vrećica, and R. T. Živaljević.
- [12] *"Bounding the tripartite-circle crossing number of complete tripartite graphs"- EUROCOMB 2019 publication*  
Acta Mathematica Universitatis Comenianae 88(3)(2019), 515-520.  
Authors: C. Camacho, S. Fernández-Merchant, M. Jelić Milutinović, R. Kirsch, L. Kleist, E. Bailey Matson, J. White.
- [13] *"Cyclohedron and Kantorovich-Rubinstein polytopes"*  
Arnold Mathematical Journal, 4(1)(2018), 87-112  
Authors: F.D. Jevtić, M. Jelić, and R. T. Živaljević.
- [14] *"On Knaster's problem"*  
Marija Jelić, Publications de l'Institut Mathématique, 99(113)(2016), 43-49.
- [15] *"Methods of Equivariant Topology in Two Nice Discrete Geometry Problems"*  
Marija Jelić, The Graduate Journal of Mathematics, 1(1) (2016), 18-27.

## PREPRINTS

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- [16] *"Matching Complexes of Outerplanar Graphs",*  
*arXiv:2411.04601*, submitted.  
Authors: M. Bayer, M. Jelić Milutinović, and J. Vega.

## INTERNATIONAL MATHEMATICAL COMPETITIONS

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- 2011 Second prize - 18<sup>th</sup> International Mathematics Competition for University Students IMC  
2010 Second prize - 17<sup>th</sup> International Mathematics Competition for University Students IMC  
2009 Second prize - 16<sup>th</sup> International Mathematics Competition for University Students IMC  
2008 **Silver medal - 49<sup>th</sup> International Mathematical Olympiad**, Spain  
2008 Silver medal - 25<sup>th</sup> Balkan Mathematical Olympiad, Republic of Macedonia  
2008 **Gold medal - 1<sup>st</sup> Romanian Master in Mathematics**, Romania  
2007 **Bronze medal - 48<sup>th</sup> International Mathematical Olympiad**, Vietnam  
2007 Silver medal - International Arhimede contest, Romania  
2007 Bronze medal - 24<sup>th</sup> Balkan Mathematical Olympiad, Greece  
2006 **Bronze medal - 47<sup>th</sup> International Mathematical Olympiad**, Slovenia  
2004 Silver medal - Junior Balkan Mathematical Olympiad, Serbia

*\* The first female participant from the area of former Yugoslavia who won three medals at International mathematical Olympiads (IMO).*

**Physics competitions, 2004-2006:** 3 first prizes at republic/federal physics competitions in Serbia and Montenegro

## PROJECTS and GRANTS

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- 2024-present Member of project **A-PLUS - Approximate Algebraic Structures of Higher Order: Theory, Quantitative Aspects and Applications**  
*Selected by Program for Excellent Projects of Young Researchers and Scientists in the Early Stage of Career - PROMIS 2023, financed by the Science Fund of the Republic of Serbia*  
Note: This project is the only project in pure mathematics selected by PROMIS 2023
- 2022-present Member of project **MEGIC - Integrability and Extremal Problems in Mechanics, Geometry and Combinatorics**, selected by program IDEAS, financed by the Science Fund of the Republic of Serbia
- 2020-present *Grant by the Ministry of Education, Science, and Technological Development of the Republic of Serbia, for the Faculty of Mathematics, no. 451-03-47/2023-01/ 200104 for year 2023.*
- 2020-2021 *Bilateral project between Slovenia and Serbia- Discrete Morse theory and its applications*  
Project coordinators: Aleš Vavpetič (Institute for mathematics, physics and mechanics, University of Ljubljana, Slovenia) and Đorđe Baralić (Mathematical Institute SANU, Serbia)
- 2014-2019 *Project 174034 - Topology, geometry and global analysis on manifolds and discrete structures, financed from national funds*

## ORGANIZING ACTIVITIES

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- 2023 MSRI Special Session: Geometric and Topological Combinatorics  
Joint Mathematics Meetings, Boston, USA, 2023. (with M. Bayer and J. Vega)

## CONFERENCES, RESEARCH VISITS, TALKS

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- 2025 British Mathematical Colloquium & British Applied Mathematical Colloquium, Exeter, United Kingdom  
Talk: Matching Complexes (workshop - Geometry and Topology)
- 2025 Balkan Mathematics Conference II, Thessaloniki, Greece  
Invited talk: Two Classes of Graph Complexes
- 2024 XIV Symposium "Mathematics and Applications", Belgrade, Serbia  
Talk: Matching Complexes of Graphs
- 2024 Celebration on the occasion of prof. Siniša Vrećica and prof. Rade Živaljević 70<sup>th</sup> birthday  
Mathematical Institute, Serbian Academy of Sciences and Arts, October 14 2024  
Talk: Graph Complexes
- 2024 Combinatorial Algebraic Topology and Applications II, Pisa, Italy  
Invited talk: *Simplicial Complexes from Graphs*
- 2024 11<sup>th</sup> Heidelberg Laureate Forum, Heidelberg, Germany
- 2022 XII Symposium "Mathematics and Applications", Belgrade, Serbia  
Talk: *Cut Complexes of Graphs*
- 2022 29<sup>th</sup> British Combinatorial Conference, Lancaster, United Kingdom  
Talk: *Cut Complexes*

- 2022 14th Nordic Combinatorial Conference, Tromso, Norway  
Talk: *Perfect Matching Complexes of Honeycomb Graphs*
- 2022 Copenhagen-Jerusalem Combinatorics Seminar  
Talk: *Matching complexes of graphs & Manifolds*
- 2021 MSRI (Mathematical Sciences Research Institute, Berkeley, USA) Summer Research Program  
Supported by the National Science Foundation (USA) under Grant No. DMS-1440140  
Research program with M. Bayer and J. Vega.
- 2021 *Graduate Research Workshop in Combinatorics 2021*
- 2020 *Women in Quant Finance Event* (online event hosted by G-Research, London, UK)
- 2020 *Bay Area Discrete Math Day* (online event hosted by the University of California, Davis, USA)
- 2018 *TRIPODS Summer Bootcamp: Topology and Machine Learning*, ICERM, Providence, RI, USA
- 2018 *Graduate Research Workshop in Combinatorics*, Iowa, USA
- 2018 *Einstein Workshop Discrete Geometry and Topology*, FU Berlin, Germany
- 2017 Introductory Workshop: *Geometric and Topological Combinatorics*, MSRI, Berkeley, USA
- 2017 Connections for Women Workshop: *Geometric and Topological Combinatorics*, MSRI, Berkeley, USA
- 2017 *NSFOCS 2017*, Novi Sad Workshop on Foundations of Computer Science, Novi Sad, Serbia  
Talk: *Combinatorics of unavoidable complexes*
- 2017 Mathematics Research Communities Summer Conference “*Beyond Planarity: Crossing Numbers*”, Utah, USA
- 2016 Research Visit, The University of Texas at Dallas, USA
- 2016 Fall ICERM - Institute for Computational and Experimental Research in Mathematics, Providence, RI, USA  
*Semester Program “Topology in Motion”,*  
Workshops: *Unusual Configuration Spaces,*  
*Stochastic Topology and Thermodynamic Limits,*  
*Topology and Geometry in a Discrete Setting*  
Talk: *On Knaster's Problem*
- 2016 *The Mathematics of Jiri Matoušek Conference*, Prague, Czech Republic
- 2016 *Rational Homotopy Theory Summer School*, Rabat, Morocco
- 2015 *Discrete Geometry Workshop*, Moscow, Russia
- 2015 *3<sup>rd</sup> Heidelberg Laureate Forum*, Heidelberg, Germany
- 2015 *BMS Summer school on Convex geometry - discrete and computational*, Berlin, Germany
- 2015 *Summer school on Computational topology, ACAT 2015*, Slovenia
- 2015 *Oberwolfach Seminar: Topological Combinatorics of Configuration Spaces*, Germany
- 2015 *HTCA 2015 - Homology: Theoretical and Computational Aspects*, Genoa, Italy
- 2015 *XXI<sup>st</sup> Oporto Meeting on Geometry, Topology and Physics - Applications of Topology*, Lisbon, Portugal
- 2012 *XVII Geometrical Seminar*, Zlatibor, Serbia
- 2010 *Geometry, Dynamics, Integrable Systems – GDIS*, Fruška Gora, Serbia
- 2008 *Geometry, Dynamics, Integrable Systems – GDIS*, Belgrade, Serbia

## SOME SYNERGISTIC ACTIVITIES

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- 2022 Invited interview for the celebration of 10th anniversary of the European Girls Mathematical Olympiad  
<https://egmo2022.hu/videos/>
- 2022 Presentation at the workshop „Perspectives of the young scientists in Serbia“, organized by the Student Seminar of the Mathematical Institute (Serbian Institute for Sciences and Arts)
- 2018 Coordinator at 35<sup>th</sup> Balkan Mathematical Olympiad, Serbia
- 2017 Coordinator at 6<sup>th</sup> European Girls' Mathematical Olympiad, Switzerland
- 2016 Deputy leader for Serbia team at 5<sup>th</sup> European Girls' Mathematical Olympiad, Romania
- 2015 Deputy leader for Serbia team at 4<sup>th</sup> European Girls' Mathematical Olympiad, Belarus
- 2014 Deputy leader for Serbia team at 3<sup>rd</sup> European Girls' Mathematical Olympiad, Turkey
- 2013 Deputy leader for Serbia team at 2<sup>nd</sup> European Girls' Mathematical Olympiad, Luxembourg
- 2013 Leader for the team of University of Belgrade at 7<sup>th</sup> SEEMOUS, Athens, Greece
- 2012 “May - the Month of Mathematics” event, a volunteer
- 2012 Deputy leader for Serbia team at Arhimede contest, Romania
- 2011 Award: „Winner of Club 27 for Science“, by Erste bank, for year 2010
- 2009 Member of Jury for the 26<sup>th</sup> Balkan Mathematical Olympiad, Serbia