

Prof. Jelena Graovac, PhD

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Personal details

Born December 14, 1979, Pristina, Serbia

Education

- 2008-2014** **PhD**, Department of Computer Science, Faculty of Mathematics, University of Belgrade. Thesis "Contribution to text categorization methods: mathematical models and applications", supervisor Prof. Gordana Pavlović-Lažetić.
- 2005-2008** **MSc**, Department of Computer Science, Faculty of Mathematics, University of Belgrade, GPA 10.0 / 10.0. Thesis "XML database management of lexical resources", supervisor Prof. Gordana Pavlović-Lažetić.
- 1999-2004** **BSc**, Department of Computer Science, Faculty of Mathematics, University of Belgrade, GPA 9.62 / 10.0.

Positions

Department of Computer Science, Faculty of Mathematics, University of Belgrade

- 2024-present** **Associate Professor**
- 2015-2024** Assistant Professor
- 2004-2015** Teaching Assistant

Teaching

- Data Mining 1
- Technical and Scientific Writing
- Web Programming
- Programming 1 (C)
- Programming 2 (C)
- Database Design (master studies)
- Information Systems (master studies)
- Introduction to Computer Organization and Architecture 1
- Introduction to Computer Organization
- Introduction to Computer Systems (C++)
- Object-Oriented Programming (Java)
- Introduction to Programming (C)

Awards and honors

- 2004** Outstanding student award, Faculty of Mathematics, University of Belgrade
- 2002-2004** Scholarship of the Foundation for Support of Youth in Sciences of the Republic of Serbia
- 2002** Norwegian Government Scholarship for the top 500 students in Serbia

Research interests

Natural language processing, artificial intelligence, machine learning.

Additional activities

- 2026-** Chair of the Committee for Doctoral Studies (Komisija za studije trećeg stepena), Faculty of Mathematics, University of Belgrade
- 2018-present** Associate Editor, *Intelligent Data Analysis*, IOS Press (M23)
- 2022** Program Committee member, IPROSE 2022 - Special Session on Intelligent Problem Solving for Smart Real World Systems, 14th Asian Conference on Intelligent Information and Database Systems (ACIIDS 2022), LNAI, Springer
- 2022** Invited talk "Machine Learning Approach for Sentiment Polarity Detection in Different Languages", International Conference NMLSP 2022: Numerical Methods for Large Scale Problems, Belgrade

Research projects

- 2011-** Project III47003 "INTELIS - Infrastructure for Technology Enhanced Learning in Serbia", Ministry of Science of the Republic of Serbia
- 2006-** Project 144030 "Automated Reasoning and Data Mining", Ministry of Science of the Republic of Serbia
- 2005** Project 1858 "Bioinformatics", Ministry of Science of the Republic of Serbia

Bibliography

PhD and master theses

- 2014** J. Graovac. **Contribution to text categorization methods: mathematical models and applications**. PhD thesis, supervisor Prof. Gordana Pavlović-Lažetić, Faculty of Mathematics, University of Belgrade.
poincare.matf.bg.ac.rs/~jgraovac/publications/jg_phd.pdf
- 2008** J. Tomašević. **XML database management of lexical resources**. Master thesis, supervisor Prof. Gordana Pavlović-Lažetić, Faculty of Mathematics, University of Belgrade.
poincare.matf.bg.ac.rs/~jtomasevic/publications/jt.pdf

Journal papers

- 2026** S. Ikiović, J. Graovac. **EduGrader: The AI-powered grading assistant**. **M22** *Computer Science and Information Systems (ComSIS)*, OnLine-First, Issue 00, pp. 26-26.
[doi:10.2298/CSIS251215026I](https://doi.org/10.2298/CSIS251215026I)
- 2026** M. Šošić, J. Graovac, R. Stanković. **Building an emotion lexicon for Serbian using curated language resources**. **M22** *Language Resources and Evaluation*, vol. 60, no. 1, art. 9.
[doi:10.1007/s10579-025-09894-5](https://doi.org/10.1007/s10579-025-09894-5)
- 2022** M. Šošić, J. Graovac. **Effective methods for email classification: Is it a business or personal email?** **M22** *Computer Science and Information Systems (ComSIS)*, vol. 19, no. 3, pp. 1155-1175.
[doi:10.2298/CSIS220212034S](https://doi.org/10.2298/CSIS220212034S)
- 2020** M. Banković, V. Filipović, J. Graovac, J. Hadži-Purić, A. R. Hurson, A. Kartelj, J. Kovačević, N. Korolija, M. Kotlar, N. B. Krdžavac, F. Marić, S. Malkov, V. Milutinović, N. Mitić, S. Mišković, M. Nikolić, G. Pavlović-Lažetić, D. Simić, S. Stojanović Đurđević, S. Vujičić Stanković, M. Vujošević Janičić, M. Živković. **Teaching graduate students how to review research articles and respond to reviewer comments**. **M22** *Advances in Computers*, vol. 116, pp. 1-63, Elsevier.
[doi:10.1016/bs.adcom.2019.07.001](https://doi.org/10.1016/bs.adcom.2019.07.001)
- 2019** J. Graovac, M. Mladenović, I. Tanasijević. **NgramSPD: Exploring optimal n-gram model for sentiment polarity detection in different languages**. **M23** *Intelligent Data Analysis*, vol. 23, no. 2, pp. 279-296.
[doi:10.3233/IDA-183879](https://doi.org/10.3233/IDA-183879)
- 2017** J. Graovac, J. Kovačević, G. Pavlović-Lažetić. **Hierarchical vs. flat n-gram-based text categorization: Can we do better?** **M22** *Computer Science and Information Systems (ComSIS)*, vol. 14, no. 1, pp. 103-121.
[doi:10.2298/CSIS151017030G](https://doi.org/10.2298/CSIS151017030G)
- 2016** J. Kovačević, J. Graovac. **Application of a structural support vector machine method to n-gram based text classification in Serbian**. *INFOtheca - Journal of Information and Library Science*, vol. 16, no. 1-2, pp. 5-23.
[doi:10.18485/infoteka.2016.16.1.2.1](https://doi.org/10.18485/infoteka.2016.16.1.2.1)
- 2015** J. Graovac, J. Kovačević, G. Pavlović-Lažetić. **Language independent n-gram-based text categorization with weighting factors: A case study**. *JIDM - Journal of Information and Data Management*, vol. 6, no. 1, pp. 4-17.
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- 2015** J. Kovačević, J. Graovac. **Prospective automated hierarchical classification of digitized documents**. **accepted** *Review of the National Center for Digitization*.
- 2014** J. Graovac. **A variant of n-gram based language-independent text categorization**. **M23** *Intelligent Data Analysis*, vol. 18, no. 4, pp. 677-695.
- 2013** J. Graovac. **Wordnet-based text categorization technique**. *INFOtheca - Journal of Information and Library Science*, vol. 14, no. 2.
infoteka.unilib.rs/2013/br.2/eng/Infoteka-2-2013-Jelena-Graovac.pdf · infoteka.unilib.rs/2013/br.2/srp/Infoteka-2-2013-Jelena-Graovac.pdf
- 2007** M. Vujošević-Janičić, J. Tomašević, P. Janičić. **Random k-GD-SAT model and its phase transition**. **M23** *Journal of Universal Computer Science*, vol. 13, no. 4, pp. 572-591.
www.jucs.org/jucs_13_4/random_k_gd_sat
- 2006** M. Živković, S. Malkov, S. Zarić, M. Vujošević-Janičić, J. Tomašević, G. Predović, N. Blažić, M. V. Beljanski. **Statistical dependence of protein secondary structure on amino acid bigrams**. *Chemical Industry and Chemical Engineering Quarterly*, 12(1), 82.
poincare.matf.bg.ac.rs/~jgraovac/publications/sdp.pdf

Books and book chapters

- 2016** M. Vujošević Janičić, J. Graovac, N. Radojičić, A. Spasić, M. Spasić, A. Zečević. **Programiranje 2 - Zbirka zadataka sa rešenjima (u programskom jeziku C)**. Matematički fakultet, Beograd, ISBN 978-86-7589-107-9.
www.programiranje2.matf.bg.ac.rs/zbirka/p2_zbirka.pdf
- 2006** P. Quaresma, P. Janičić, J. Tomašević, M. Vujošević-Janičić, D. Tošić. **XML-based format for descriptions of geometrical constructions and geometrical proofs**. Chapter in *Communicating Mathematics in Digital Era (CMDE 2006)*, eds. J. M. Borwein, E. M. Rocha, J. F. Rodrigues, Aveiro, Portugal.
poincare.matf.bg.ac.rs/~jgraovac/publications/xmlFG.pdf

Conference papers

- 2026** S. Petalinkar, M. Ikonić Nešić, R. Stanković, J. Graovac. **A multilingual sentence-transformer baseline for Serbian newspaper topic classification**. *International Conference on Language Technologies for Low-resource Languages (LATE-LRL)*, Fes, Morocco.

- 2026** M. Gligorijević, M. Vujošević Janičić, **J. Graovac**. **Same pace, different path: An NLP-based analysis of gender disparities in IT careers.** *Artificial Intelligence Conference*, Belgrade, Serbia.
- 2026** P. Jovančić, M. Marić, I. Ristović, **J. Graovac**, A. Madžarević, N. Stojković, F. Miletić, S. Đenadić. **Green predictive maintenance 4.0 (GPM 4.0) in mining.** *10th International Conference Mining and Environmental Protection (MEP 2026)*, Soko Banja, Serbia, pp. 47-60. doi:10.46793/MEP26.047J
- 2026** P. Jovančić, M. Marić, M. Milovanović, **J. Graovac**, L. Ristić, M. Žarković, N. Gnjatović, I. Ristović. **Center for applied diagnostic research and artificial intelligence - need or fiction.** *1st International Conference Predictive Maintenance 4.0*, Jahorina, Bosnia and Herzegovina.
- 2025** M. Šošić, R. Stanković, **J. Graovac**. **Developing language resources for recognizing moral aspects in the Serbian language: Multi-label categorization through the perspective of Moral Foundations Theory.** abstract *Artificial Intelligence Conference*, Book of Abstracts, Belgrade, Serbia.
- 2024** M. Šošić, R. Stanković, **J. Graovac**. **Social-Emo.Sr: Emotional multi-label categorization of conversational messages from social networks X and Reddit.** abstract *South Slavic Languages in the Digital Environment (JuDig 2024)*, Book of Abstracts, Faculty of Philology, University of Belgrade.
- 2022** **J. Graovac**, I. Tomašević, G. Pavlović-Lažetić. **Meet your email sender - hybrid approach to email signature extraction.** *Asian Conference on Intelligent Information and Database Systems (ACIIDS 2022)*, LNAI, Springer, pp. 547-558. doi:10.1007/978-3-031-21967-2_44
- 2020** **J. Graovac**, M. Radović, B. Altinel Girgin. **ML-SPD: Machine learning based sentiment polarity detection.** *International Conference on INnovations in Intelligent SysTems and Applications (INISTA 2020)*, IEEE, pp. 1-7. doi:10.1109/INISTA49547.2020.9194633
- 2016** **J. Graovac**, J. Kovačević, G. Pavlović-Lažetić. **Machine learning-based approach to help diagnosing Alzheimer's disease through spontaneous speech analysis.** abstract *Belgrade Bioinformatics Conference (BelBI 2016)*, Book of Abstracts, Belgrade, Serbia. alas.matf.bg.ac.rs/~websites/bioinfo/wp-content/uploads/2015/11/BelBI2016.book_of_abstracts.v3.pdf
- 2014** **J. Graovac**, G. Pavlović-Lažetić. **Language-independent sentiment polarity detection in movie reviews: A case study of English and Spanish.** *6th International Conference ICT Innovations 2014*, Web Proceedings, ISSN 1857-7288, pp. 13-22, Ohrid, Macedonia. poincare.matf.bg.ac.rs/~jgraovac/publications/jgSPD.pdf
- 2014** **J. Graovac**. **Text categorization using n-gram based language independent technique.** *Natural Language Processing for Serbian - Resources and Applications*, Proc. of the Conference "35th Anniversary of Computational Linguistics in Serbia", pp. 124-135, Belgrade. poincare.matf.bg.ac.rs/~jgraovac/publications/jg35CLS.pdf
- 2012** **J. Graovac**. **Serbian text categorization using byte level n-grams.** *CLoBL 2012: Workshop on Computational Linguistics and Natural Language*, 5th Balkan Conference in Informatics, pp. 93-97, Novi Sad, Serbia. poincare.matf.bg.ac.rs/~jgraovac/publications/stcbn.pdf
- 2010** G. Pavlović-Lažetić, **J. Tomašević**. **Ontology-driven conceptual document classification.** *KDIR 2010 - International Conference on Knowledge Discovery and Information Retrieval*, pp. 383-386, Valencia, Spain. doi:10.5220/0003063903830386 · poincare.matf.bg.ac.rs/~jgraovac/publications/odcdc.pdf
- 2008** **J. Tomašević**, G. Pavlović-Lažetić. **Productivity of concepts in Serbian Wordnet.** *Proceedings of the Sixth Language Technologies Conference*, IS 2008, eds. T. Erjavec, J. Žganec Gros, pp. 86-91, Ljubljana, Slovenia. nl.ijs.si/is-ltc08/IS-LTC08-Proceedings.pdf
- 2006** **J. Tomašević**, M. Vujošević-Janičić. **TemidaLib - multiprecision arithmetic library.** *Zbornik radova SYMOPIS 2006*, Banja Koviljača.
- 2006** M. Vujošević-Janičić, **J. Tomašević**. **Phase transition in random SAT problems.** *Zbornik radova SYMOPIS 2006*, Banja Koviljača.
- 2005** M. Vujošević-Janičić, **J. Tomašević**, M. Živković, S. Malkov, G. Predović, N. Blažić, M. V. Beljanski, S. Zarić. **Distribution of distances of connected amino acid pairs in proteins.** poster *1st South East European Congress of Chemical Engineering*, Belgrade (poster).