

# Kurbalija Vladimir

## Curriculum Vitae

### Address:

Department of Mathematics and Informatics  
Faculty of Science  
University of Novi Sad

Trg Dositeja Obradovića 4  
21000 Novi Sad  
Serbia

**phone:** (+381-21) 458-888  
**fax:** (+381-21) 6350-458  
**e-mail:** [kurba@dmi.uns.ac.rs](mailto:kurba@dmi.uns.ac.rs)  
**URL:** <http://www.dmi.rs/Faculty/kurbalijav>  
<http://perun.dmi.rs/kurbalija/index.html>

### Home Address:

Bele Njive 21  
21000 Novi Sad  
Serbia

**phone:** (+381 64) 18 10 10 4

## Personal Data

- **Date of birth:** May 12, 1977
- **Place of birth:** Novi Sad, Serbia, Yugoslavia
- **Sex:** Male
- **Marital status:** Married (two children)
- **Citizenship:** Serbian

## Languages

- **Mother tongue:** Serbian
- **Active knowledge:** English (fluent), German (low level), French (low level)
- **Reading knowledge:** all Slavic languages

## Fields of Interests in Computer Science

- Time Series Analysis
- Artificial Intelligence
- Case-Based Reasoning Systems
- Compiler Construction
- Programming Languages

## Education

University of Novi Sad, Faculty of Science, Novi Sad, Serbia:

- **B.Sc. Computer Science**, 2000 (grade point average 9.88 / 10 max.)
- **M.Sc. Computer Science**, 2006 (grade point average 10 / 10 max.)
- **Ph.D. Computer Science**, 2009 (field: Time Series Analysis)

## Professional Experience

- **Research and Teaching Assistant**, 2000. - 2010  
University of Novi Sad, Faculty of Science, Novi Sad
- **Assistant Professor**, 2010 – 2015,  
University of Novi Sad, Faculty of Science, Novi Sad
- **Head of the Computer Science chair**, 2014 – 2015,  
University of Novi Sad, Faculty of Science, Novi Sad
- **Associate Professor**, 2015 – present,  
University of Novi Sad, Faculty of Science, Novi Sad

## Teaching Experience

### Taught the Courses

- *Data Structures and Algorithms 1*, 2011 - present  
(for students of computer science – second semester),
- *Web Design*, 2010 - present  
(for students of computer science – second semester)
- *Architecture, Design and Patterns*, 2010 - present  
(for students of computer science – graduate level)
- *Compiler Construction*, 2013 - present  
(for students of computer science - seventh and eighth semesters),

### Conducted the Exercises for the Courses

- *Compiler Construction*, 2000 - present  
(for students of computer science - seventh and eighth semesters),
- *Data Structures and Algorithms*, 2001 - 2010  
(for students of computer science – second, third and fourth semesters),
- *Internet Tools*, 2003 - present  
(for students of computer science – second semester)

## Publications

Author or co-author of 30 research papers and 2 abstracts (mainly on Case-Based Reasoning Systems and Time Series Analysis).

Enclosed is the list of publications.

## Presentations

Presentations on 6 conferences abroad (in Germany, Slovenia, Slovakia, Macedonia, Bulgaria), on 1 seminar abroad (in Germany) and on 3 conferences in Yugoslavia/Serbia.

Enclosed is the list of presentations.

## Research Contracts

### Researcher

- *Development of (intelligent) techniques based on software agents for application in information retrieval and workflow*, 2002 – 2004. Supported by Ministry of Science and Technologies (Republic of Serbia), project no. 1844.
- *Software Engineering: Computer Science Education and Research Cooperation*, Joint project of 8 countries and 13 universities, Supported by: DAAD and Stability Pact for South Eastern Europe, 2001-2003, 2003-2006.

- *Joint M.Sc Curriculum in Software Engineering*, Joint project of institutions and experts from Serbia, Macedonia, EU, Bulgaria and Romania, Supported by Tempus, grant no. CD\_JEP 18035-2003, 2004-2007.
- *Abstract Methods and Applications in Computer Science, 2006 – 2010*. Supported by Ministry of Science and Technologies (Republic of Serbia), project no. 144017A.
- *Intelligent techniques and their integration into wide-spectrum decision support, 2011-2014*, Supported by Ministry of Science, Technologies, and Development (Republic of Serbia), project no. 174023
- *Infrastructure for technology enhanced learning in Serbia, 2011-2014*, Supported by Ministry of Science, Technologies, and Development (Republic of Serbia), project no. III47003
- *Intelligent Techniques for Data Integration and Decision Support in the Medical Domain, 2011-2012*, DAAD Bilateral Project, Supported by ministries of science of both countries (Serbia and Germany)
- *Emotional Intelligence and Applications Based on Multi-Agent Systems, 2013-2014*, Bilateral Project, Supported by ministries of science of both countries (Serbia and China)
- *Innovative teaching curricula, methods and infrastructures for computer science and software engineering, 2015-2018*, Institutional partnerships (SCOPES), Project no. 160480
- *Multidimensional quality control for e-business applications, 2016-2017*, Bilateral Project, Supported by ministries of science of both countries (Serbia and Slovenia)
- *Intelligent techniques for improving medical detection, analysis and explanation of human cognition and behavior disorders, 2016-2017*, Bilateral Project, Supported by ministries of science of both countries (Serbia and Slovenia)

## Conferences Organized

- Member of the organizing committee of the ADBIS 2010 conference – 14<sup>th</sup> East-European Conference on Advances in Databases and Information Systems Novi Sad, September 20 - 24, 2010.
- Secretary of the organizing committee of the NaRa2003 conference – *Second Yugoslav Conference on Teaching Informatics, Novi Sad, September 5-6 2003*.
- Member of the organizing committee of the NARA 2002 conference – *First Yugoslav Conference on Teaching Informatics, Novi Sad, June 6-7 2002*.
- Editor Assistant of ComSIS Journal ([www.comsis.org](http://www.comsis.org)), 2009-present

## Program Committee Member

- 5th Balkan Conference in Informatics - BCI 2012, Novi Sad, Serbia, 16-20 September 2012.
- 6th Balkan Conference in Informatics - BCI 2013, Thessaloniki, Greece, 19-21 September, 2013.
- 2nd Workshop on Software Quality Analysis, Monitoring, Improvement, and Applications - SQAMIA 2013, 15-17 September, 2013, Novi Sad, Serbia

- 4th Symposium on Computer Languages, Implementations and Tools - SCLIT 2014, September 22 - 28, 2014, Rhodes, Greece
- 3rd Workshop on Software Quality Analysis, Monitoring, Improvement, and Applications - SQAMIA 2014, September 19-22, 2014, Lovran, Croatia
- 7th International KES Conference on INTELLIGENT DECISION TECHNOLOGIES – KES-IDT-15, Naples, Italy, 10 - 12 June 2015
- 4th workshop on Software Quality Analysis, Monitoring, Improvement, and Applications (<http://2015.sqamia.org>), June 8 - 10, 2015, in Maribor, Slovenia.
- 7th Balkan Conference in Informatics - BCI 2015, Craiova, Romania, 2-4 September, 2015.
- 5th Symposium on Computer Languages, Implementations and Tools - SCLIT 2015, September 23 - 29, 2015, Rhodes, Greece.
- 2016 International Symposium on INnovations in Intelligent SysTems and Applications, 2-5 August 2016, Sinaia, Romania.
- 8th International KES Conference on INTELLIGENT DECISION TECHNOLOGIES – KES-IDT-16, 15-17 June 2016, Tenerife, Spain.
- 6th Symposium on Computer Languages, Implementations and Tools - SCLIT 2016, September 19 - 25, 2016, Rhodes, Greece.
- 5th workshop on Software Quality Analysis, Monitoring, Improvement, and Applications (SQAMIA 2016), August 29 - 31, 2016, in Budapest, Hungary.

## Reviewer

- Computers in Biology and Medicine, the international journal, ISSN: 0010-4825
- Computer Science and Information Systems (ComSIS), the international journal published by ComSIS Consortium ([www.comsis.org](http://www.comsis.org))
- 8th International KES Conference on Agents and Multi-agent Systems – Technologies and Applications, Chania, Greece, 18 - 20 June 2014
- IEEE 12th International Symposium on Intelligent Systems and Informatics (SISY 2014), Subotica, Serbia, September 11-13, 2014
- Intelligent Decision Technologies: an International Journal, ISSN: 1872-4981
- Computer Methods and Programs in Biomedicine, the international journal, ISSN: 0169-2607
- IEEE 13th International Symposium on Intelligent Systems and Informatics (SISY 2015), Subotica, Serbia, September 17-19, 2015
- Communications in Statistics - Simulation and Computation, the international journal, ISSN: 0361-0918 (Print), 1532-4141 (Online)

## Awards

- University and faculty awards for excellent results in first, second and fourth years of studies.
- University and faculty awards for successful undergraduate studies.

- "Aleksandar Saša Popović" – University award for exceptional graduation thesis in the field of Computer Science (2000).
- "Aleksandar Saša Popović" – Faculty award for exceptional research work in the field of Computer science (2003).
- Best paper award at 3<sup>rd</sup> International Conference on Software, Services and Semantic Technologies, with paper III-9

## **Specializations and Short-Term research scholarships**

- **Germany**, Berlin, Humboldt University Berlin, Faculty of Mathematics and Natural Sciences II, Department of Computer Science, Research Group Artificial Intelligence: five months 2002/2003.
  - Participation in project "Utilization of Case-Based Reasoning Technology for implementation Decision Support Systems" (Artificial Intelligence, Java, Sun+Linux)
- **Serbia and Montenegro**, Niš, University of Niš, Faculty of Electronics: October 9-11 2003
  - Summer School on Computational Intelligence and Information Technologies.
- **Austria**, Linz, Johannes Kepler University Linz, Institute for System Software, one month – June 2005.
  - Participation in project "Innovation of Compiler Construction Course" (Compiler Construction, Java)

## **Miscellaneous**

### ***Programming Languages used for Teaching/Research***

Java, Modula-2, Basic, Pascal, LISP, PROLOG, SQL.

### ***Practical Experience in MS Office***

Word, Excel, Access, Power Point, Front Page.

### ***Web technologies***

PHP, Apache Web Server, HTML, XML, MySQL.

### ***Practical Experience in Operating Systems and Hardware Architectures***

- Personal Computers & MS-DOS, Windows 3.1x, Windows 95/97/98, Windows NT/2000, Linux.
- Sun Machine & UNIX (Linux)

### ***Compiler Tools***

Compiler generators such as Coco/R, Lex, Yacc, JLex, CUP

## List of Publications

### Vladimir Kurbalija

#### Books

1. **V. Kurbalija**, M. Radovanović and D. Pracner. Exercises in Data Structures and Algorithms 1. Department of Mathematics and Informatics, Faculty of Sciences, University of Novi Sad, Serbia, 127 pages, 2014 (in Serbian)

#### Research papers

##### *1 Papers published in International Journals*

1. **Kurbalija V.**, Ivanović M., *Case-Based Reasoning – A Powerfull Artificial Intelligence Approach*, Journal of Electrical Engineering 12/s, Slovak Centre of IEE, Vol. 53, 2002, pp.20-24 (Proceedings of Conference of Applied Mathematics for undergraduate and graduate students “SCAM 2002”, Bratislava, Slovak Republic, April 19-20, 2002).
2. Simić D., **Kurbalija V.**, Budimac Z., *An Application of Case-Based Reasoning in Multidimensional Database Architecture*, Lecture Notes in Computer Science (LNCS) 2737, pp. 66-75, (Proceedings of the Fifth International Conference on Data Warehousing and Knowledge Discovery "DaWaK 2003", Prague, Czech Republic, September 3-5, 2003).
3. **Kurbalija V.**, Ivanović M., *CaseBaseGenerator for Intelligent Systems*, Novi Sad Journal of Mathematics – NSJOM, vol. 35, no. 1, 2005, pp. 25-40.
4. Simić D., Budimac Z., **Kurbalija V.**, Ivanović M., *Case-Based Reasoning for Financial Prediction*, Lecture Notes in Computer Science (LNCS), ISSN: 0302-9743, vol. 3533/2005, pp. 839-842, (Proceedings of 18th International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems, IEA/AIE 2005, Bari, Italy, June 22-24 2005).
5. **V. Kurbalija**, Z. Budimac, *CBR framework for generating DSSs*, Novi Sad Journal of Mathematics – NSJOM, vol. 38, no. 3, 2008, pp. 227-234.
6. **Kurbalija V.**, Ivanović M., Budimac Z., *CASE-BASED CURVE BEHAVIOUR PREDICTION*, Software: Practice and Experience, ISSN: 0038-0644, Volume 39, Issue 1, January 2009, pp 81-103 (DOI: 10.1002/spe.891)
7. **Kurbalija V.**, von Bernstorff C., Nachtwei J., Ivanović M., Burkhard HD., *Matching observed with empirical reality– What you see is what you get?*, Fundamenta Informaticae, IOS Press, vol. 129, num. 1-2, 2014, pp. 133-147. (DOI: 10.3233/FI-2014-965)
8. **V. Kurbalija**, M. Radovanović, Z. Geler and M. Ivanović, *The Influence of Global Constraints on Similarity Measures for Time-Series Databases*. Knowledge-Based Systems, vol. 56, January 2014, pp. 49-67. (DOI:10.1016/j.knosys.2013.10.021)
9. **Vladimir Kurbalija**, Miloš Radovanović, Mirjana Ivanović, Danilo Schmidt, Gabriela Lindemann von Trzebiatowski, Hans-Dieter Burkhard, Carl Hinrichs, *Time-series analysis in the medical domain: A study of Tacrolimus administration and influence on kidney graft function*, Computers in Biology and Medicine, Volume 50, 2014, pp. 19-31. (DOI: 10.1016/j.combiomed.2014.04.007)
10. Zoltan Geler, **Vladimir Kurbalija**, Miloš Radovanović, Mirjana Ivanović, *Comparison of different weighting schemes for the kNN classifier on time-series data*, Knowledge and Information Systems, in

11. Ivanović, M., Budimac, Z., Radovanović, M., **Kurbalija, V.**, Dai, W., Bădică, C., Colhon, M., Ninković, S., Mitrović, D.: *Emotional Agents – State of the Art and Applications*. Computer Science and Information Systems, Vol. 12, No. 4, 2015, pp. 1121–1148. (DOI: 10.2298/CSIS1410260471)

## *II Papers published in National Journals*

1. **Kurbalija V.**, Ivanović M., Budimac Z., *CBR – Case-Based Reasoning*, infoM 5/2003 - Journal of Information Technology and Multimedia systems, pp. 14-20

## *III Papers published in Proceedings of International Conferences*

1. Budimac Z., **Kurbalija V.**, *Case-Based Reasoning – A Short Overview*, Proceedings of Second International Conference on Informatics and Information Technology “Molika 2001”, Bitola, Macedonia, December 20-23, 2001, pp. 222-234.
2. Ivanović M., **Kurbalija V.**, Budimac Z., Semnic M., *Role of Case-Based Reasoning in Neurology Decision Support*, Proceedings of the Fifth Joint Conference on Knowledge-Based Software Engineering "JCKBSE 2002", Maribor, Slovenia, September 11-13, 2002, pp. 255-264.
3. **Kurbalija V.**, Ivanović M., *Artificial Intelligent Support for Medical Diagnosis*, Proceedings of a Workshop On Computational Intelligence and Information Technologies, Niš, Serbia and Montenegro, October 13, 2003, pp. 69-73.
4. **Kurbalija V.**, Ivanović M., *CBG – A Framework for Intelligent Decision Support Systems*, Proceedings of Fourth International Conference on Informatics and Information Technology “Molika 2003”, Bitola, Macedonia, December 11-14, 2003, pp. 118-128.
5. Simić D., **Kurbalija V.**, Budimac Z., *Improving the CBR System for Financial Predictions*, Proceedings of the International Conference on Information and Knowledge Engineering "IKE 04", Las Vegas, Nevada, USA, June 21-24, 2004, pp. 561-567.
6. **Kurbalija V.**, Ivanović M., Budimac Z., Semnic M., *Multiple Sclerosis Diagnosis - Case-Based Reasoning Approach*, Proceedings of Twentieth IEEE International Symposium on Computer-Based Medical Systems (CBMS 2007), Maribor, Slovenia, June 20-22 2007, pp 65-71.
7. **Kurbalija V.**, Ivanović M., Budimac Z., *Case-Based Reasoning Framework for Generating Wide-Range Decision Support Systems*, Proceedings of the 2008 International Conference on Artificial Intelligence and Pattern Recognition, Orlando, Florida, USA July 7-10 2008, pp 273-280.
8. **V. Kurbalija**, M. Radovanović, Z. Geler and M. Ivanović. *A framework for time-series analysis*. In Proceedings of AIMS'10, 14th International Conference on Artificial Intelligence: Methodology, Systems, Applications, volume 6304 of Lecture Notes in Artificial Intelligence, Varna, Bulgaria, 2010. Springer, pp 42–51, (the framework is accessible at <http://perun.pmf.uns.ac.rs/fap/>)
9. **V. Kurbalija**, M. Radovanović, Z. Geler and M. Ivanović. *The influence of global constraints on DTW and LCS similarity measures for time-series databases*. In Proceedings of S3T'11, 3<sup>rd</sup> International Conference on Software, Services and Semantic Technologies, volume 101 of Advances in Intelligent and Soft Computing, Bourgas, Bulgaria, 2011. Springer, pp 67–74, (extended version accessible at <http://arxiv.org/abs/1107.0134>) [**Best Paper Award**]
10. Mirjana Ivanovic, Hans Dieter Burkhard, **Vladimir Kurbalija**, Milos Radovanovic, Danilo Schmidt, Gabriela Lindemann V. Trzebiatowski and Marija Semnic. *Intelligent Techniques for Data Integration and Decision Support in the Medical Domain*, IADIS International Conference, Information Systems 2012, Berlin, Germany March 10-12, 2012, pp. 141-148.
11. M. Ivanovic, M. Radovanovic, **V. Kurbalija** and J. Vidakovic. *Computer Science and Information Systems: Publishing an international open access journal in a developing country*. In Proceedings of the 5th Belgrade Open Access Conference 2012, Belgrade, Serbia, 2013, pp. 101-111.



12. **Vladimir Kurbalija**, Charlotte von Bernstorff, Hans-Dieter Burkhard, Jens Nachtwei, Mirjana Ivanović, and Lidija Fodor. *Time-series mining in a psychological domain*. In Proceedings of the Fifth Balkan Conference in Informatics (BCI '12). ACM, New York, NY, USA, 2012, pp. 58-63. DOI=10.1145/2371316.2371328 <http://doi.acm.org/10.1145/2371316.2371328>.
13. Miloš Radovanović, Gabriela Lindemann von Trzebiatowski, **Vladimir Kurbalija**, Mirjana Ivanović, Hans-Dieter Burkhard, Danilo Schmidt, and Carl Hinrichs. *Quality checking and mining nephrology biopsy data*. In Proceedings of the 6th Balkan Conference in Informatics (BCI '13). ACM, New York, NY, USA, 2013, pp. 110-113. DOI=10.1145/2490257.2490275 <http://doi.acm.org/10.1145/2490257.2490275>
14. Ivanović M., Radovanović M., Budimac Z., Mitrović D., **Kurbalija V.**, Dai W, Zhao W. *Emotional Intelligence and Agents: Survey and Possible Applications*, Rajendra Akerkar, Nick Bassiliades, John Davies, Vadim Ermolayev (Eds.): 4th International Conference on Web Intelligence, Mining and Semantics (WIMS 14), WIMS '14, Thessaloniki, Greece, June 2-4, 2014. ACM 2014 ISBN 978-1-4503-2538-7, paper 52.
15. Geler Z, **Kurbalija V**, Radovanović M, Ivanović M, Impact of the Sakoe-Chiba band on the DTW time-series distance measure for kNN classification, volume 8793 of Lecture Notes in Artificial Intelligence, Knowledge Science, Engineering and Management. 7th Int Conf Knowl Sci Eng Manag KSEM 2014 pp.105–114. doi: 10.1007/978-3-319-12096-6, 2014.
16. **Vladimir Kurbalija**, Mirjana Ivanović, Miloš Radovanović, Zoltan Geler, Dejan Mitrović, Weihui Dai, and Weidong Zhao, *Cultural Differences and Similarities in Emotion Recognition*. In Proceedings of the 7th Balkan Conference on Informatics Conference (BCI '15). ACM, New York, NY, USA, Article 34, 6 pages, 2015. DOI=<http://dx.doi.org/10.1145/2801081.2801093>
17. **Vladimir Kurbalija**, Brankica Bratić, *Time series reconstruction analysis*, In Proceedings of the 8th IEEE International Conference on Intelligent Systems IS'16, 2016 (in print)
18. Mirjana Ivanović, **Vladimir Kurbalija**, *Time Series Analysis and Possible Applications*, In Proceedings of the 39<sup>th</sup> International Convention on Information and Communication Technology, Electronics and Microelectronics, 2016, (in print) **[invited paper]**

#### **IV Abstracts**

1. Ivanović M., **Kurbalija V.**, Budimac Z., *Decision Support System in Neurology*, Mathematics in Medicine and Pharmacy – Satellite workshop of PRIM 2002, Novi Sad, Yugoslavia, June 21, 2002, pp. 32.
2. **Kurbalija V.**, Radovanović M., Geler Z., Ivanović M., *Analysis of Constrained Time-Series Similarity Measures*, Workshop Progress in Decision Procedures: From Formalizations to Applications, March 30, 2013, Belgrade, Serbia, pp. 12.

## List of Presentations

### Vladimir Kurbalija

1. Workshop Progress in Decision Procedures: From Formalizations to Applications, March 30, 2013, Belgrade, Serbia, with paper no. IV-2.
2. 3<sup>rd</sup> International Conference on Software, Services and Semantic Technologies (S3T'11), Bourgas, Bulgaria, 2011, with paper no. III-9.
3. The 14th International Conference on Artificial Intelligence: Methodology, Systems, Applications (AIMSA 2010), Varna, Bulgaria, September 8th - 10th, 2010, with paper no. III-8.
4. Twentieth IEEE International Symposium on Computer-Based Medical Systems (CBMS 2007), Maribor, Slovenia, June 20-22 2007, with paper no. III-6.
5. Fourth International Conference on Informatics and Information Technology "Molika 2003", Bitola, Macedonia, December 11-14, 2003, with paper no. III-4.
6. Workshop On Computational Intelligence and Information Technologies, Niš, Serbia and Montenegro, October 13, 2003, with paper no III-3.
7. Project Seminar (Forschungsseminar) in Artificial Intelligence, Humboldt University Berlin, Germany, November 26, 2002, Theme: *Special Case-Based Reasonong Applications*.
8. Mathematics in Medicine and Pharmacy – Satellite workshop of PRIM 2002, Novi Sad, Yugoslavia, June 21, 2002, with abstract no. IV-1.
9. Conference of Applied Mathematics for undergraduate and graduate students "SCAM 2002", Bratislava, Slovak Republic, April 19-20, 2002, with paper no. I-1.