Branimir Todorović
Associate Professor, Departmant of Computer Science
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Projects of the Ministry of Education and Science of the Republic of Serbia:

1. Discrete and continuous stochastic models and applications (number 101834, project leader Mathematical Institute SANU, fundamental research program).

2. Development of model and software for risk management, reliability, protection and insurance of industrial systems (number MIS.3.07.0083.A, project manager at the Faculty of Occupational Safety in Niš, Technological development program).

3. Intelligent systems for monitoring the dynamics of thermal behavior of public buildings (number 280170, project leader at the Faculty of Occupational Safety in Niš, National Energy Efficiency Program).

4. Development of Methods of Calculation and Processing of Information: Theory and Applications, (No. 174013, Principal Faculty of Natural Sciences, Niš, Fundamental Research Program), 2011-2017.

Commercial Projects
Head of Machine Learning and Data Science at Zucchabar - Intelligent learning platform for self-driven education, February 2019 – present.
1. Deep learning neural networks for question asking and answering
2. Open domain information extraction and knowledge base completion
3. Deep learning algorithms and architectures for common sense reasoning

Co-Founder of Center for Research and Development in Intelligent Systems, Aug 2018 – 2021
Projects:
4. Anomaly detection on images: detection of faults and problems on railway brakes using intelligent image processing

Machine learning lead scientist and solutions architect, NIRI 2009 – Oct 2018
Projects:
1. Resume and vacancy semantic parsing and information extraction
2. Knowledge discovery using vector space models of natural language
3. Document classification
4. Unsupervised anomaly detection and diagnosis of Windows system logs using recurrent neural networks
5. Intelligent image processing: classification, detection, segmentation

Machine learning team leader, Accordia Group Nis, 2005 – Oct 2009
Projects:
1. Open domain information extraction: named entity recognition, relation and event extraction
2. Knowledge discovery and knowledge base completion
3. Predictive analytics and financial time series prediction
4. Dynamic warping and time series similarity search

Selected papers in international journals

1. V. Ilić, M. Stanković, **B. Todorović**, Entropy message passing, IEEE Transactions on Information Theory 57 (1) (2011), 375–380.

2. A. Trokicic,, **B. Todorovic**, Constrained Spectral Clustering Via Multi-Layer Graph Embeddings on a Grassmann Manifold, International Journal of Applied Mathematics and Computer Science, vol. 29 br. 1, str. 125-137, 2019

3. D. Mančev, **B. Todorović,** A primal sub-gradient method for structured classification with the averaged sum loss, International Journal of Applied Mathematics and Computer Science 24 (4) (2014) 917–930.

4. V. Ilić, D. Mančev, **B. Todorović**, M. Stanković, Gradient computation in linear-chain conditional random fields using the entropy message passing algorithm, Pattern Recognition Letters 33 (13) (2012) 1776–1784.

5. S. Trajković, **B. Todorović**, M. Stanković, Forecasting of reference evapotranspiration by artificial neural networks, Journal of Irrigation and Drainage Engineering 129 (6) (2003), 454–457.

6. V. Ilić, M. Stanković, **B.Todorović**, Computation of cross-moments using message passing over factor graphs, Advances in Mathematics of Communications 6 (3) (2012)363–384.

7. D. Mančev, **B. Todorović**, k-best max-margin approaches for sequence labeling, Computer Science and Information Systems 12 (2) (2015)465–486.

Selected chapters in international monographs

8. **B. Todorović,** C. Moraga, M. Stanković, Sequential Bayesian estimation of recurrent neural networks, in: R. Seising, H. Allende-Cid(Eds.): Claudio Moraga: A Passion for Multi-Valued Logic and Soft Computing, Studies in Fuzziness and Soft Computing, Vol. 349, 2017, pp. 173-199.

9. **B. Todorović**, M. Stanković, C. Moraga, Recurrent Neural Networks Training Using Derivative Free Nonlinear Bayesian Filters, Computational Intelligence – *Computa-tional Intelligence, Proceedings of the International Joint Conference, IJCCI 2014 Rome*, Studies in Computational Intelligence, Vol. 620, 2016, pp. 383-410. **(best paper award)**

10. **B.Todorović**, S. Rančić, E. Mulalić, Context hidden Markov model for named entity recognition, in: Gautschi, W., Mastroianni, G., Rassias, Th. M., (Eds.) Approximation and Computation, In Honor of G. V. Milovanović, Springer, 2011, pp. 447–460. (ISBN 978-1-4419-6593-6).

11. **B. Todorović,** M. Stanković, Moraga C.(2004), "On-line Adaptation of Radial Basis Function Networks using the extended Kalman filter, in: Sinčák, P., Vaščák, J. and K. Hirota (eds.), Machine intelligence: Quo vadis?, Advances in Fuzzy Systems –Appli-cations and Theory, Vol. 21, World Scientific, 2004, pp. 73–92 (ISBN 981-238-751-X).

12. **B. Todorović,** M. Stanković, C. Moraga, Extended Kalman filter based adaptation of time-varying recurrent radial basis function networks structure", in: Sinčák, P., Vaščák, J. and K. Hirota (eds.), Machine intelligence: Quo vadis?, Advances in Fuzzy Systems –Applications and Theory, Vol. 21, World Scientific, 2004, pp. 115–124 (ISBN 981-238-751-X).