

# Scientific Works

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## 1 Work in Progress

- (1) *Some Higher-Order Logics for Type-Theoretic Semantics: TY2, TT2, and IL of Natural Language*. Draft, Preprint File at ResearchGate:  
[https://www.researchgate.net/publication/237405252\\_Some\\_Higher-Order\\_Logics\\_for\\_Type-Theoretic\\_Semantics\\_TY2\\_TT2\\_and\\_IL\\_of\\_Natural\\_Language](https://www.researchgate.net/publication/237405252_Some_Higher-Order_Logics_for_Type-Theoretic_Semantics_TY2_TT2_and_IL_of_Natural_Language)
- (2) *Type-Theory of Acyclic Algorithms for Syntax-Semantics Interfaces of Formal, Artificial, and Natural Languages*
- (3) *Algorithmic Dependent-Type Theory of Situated Information*
- (4) *Type Theory of Situated Information, its Dependent Types, and Syntax-Semantics Interfaces*
- (5) Loukanova, R.: *Semantics of Propositional Attitudes in Type-Theory of Algorithms*. Extended paper (in preparation). Accepted in: Logic and Engineering of Natural Language Semantics. LENLS 2023, Lecture Notes in Computer Science, LNCS, 2024. (FoLLI series.)

## 2 List of Publications

### 2.1 Publications in Journals or Book Chapters — Refereed

- (1) Loukanova, R.: Logic Operators and Quantifiers in Type-Theory of Algorithms. In: Bekki, D., Mineshima, K., McCready, E. (eds) Logic and Engineering of Natural Language Semantics. LENLS 2022, Lecture Notes in Computer Science, LNCS, Volume 14213, 2023. (FoLLI series) Springer, Cham. First Online: 24 October 2023.  
[https://doi.org/10.1007/978-3-031-43977-3\\_11](https://doi.org/10.1007/978-3-031-43977-3_11)  
Print ISBN 978-3-031-43976-6 Online ISBN 978-3-031-43977-3
- (2) Loukanova, R.: Restricted Computations and Parameters in Type-Theory of Acyclic Recursion. ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal, 12(1) (2023), e29081. <https://doi.org/10.14201/adcaij.29081>  
<https://revistas.usal.es/cinco/index.php/2255-2863/article/view/29081/29667>  
(access to pdf)
- (3) Loukanova, R.: Eta-Reduction in Type-Theory of Acyclic Recursion. ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal, 12(1) (2023), e29199.  
<https://doi.org/10.14201/adcaij.29199>  
<https://revistas.usal.es/cinco/index.php/2255-2863/article/view/29199/29663>  
(access to pdf)
- (4) Loukanova, R. *Currying Order and Restricted Algorithmic Beta-Conversion in Type Theory of Acyclic Recursion*. In: Pavel Materna and Bjørn Jespersen (eds). Logically Speaking. A Festschrift for Marie Duží. Tribute Series edited by Dov Gabbay. 2022. (Appeared in January 2023) Volume 49. pp. 285–310. College Publications. ISBN-10: 1848904193 ISBN-13: 978-1-84890-419-4 (<http://www.collegepublications.co.uk/tributes/?00049>)  
preprint at ResearchGate: DOI: 10.13140/RG.2.2.34553.75365  
(<https://doi.org/10.13140/RG.2.2.34553.75365>)
- (5) Loukanova, R.: *Type-Theory of Acyclic Algorithms for Models of Consecutive Binding of Functional Neuro-Receptors*. In: Grabowski A., Loukanova R., Schwarzweller C. (eds) AI Aspects in Reasoning, Languages, and Computation. Book series: Studies in Computational Intelligence (SCI). 2020. Volume 889. pp. 1–48. Springer International Publishing. Cham. DOI: 10.1007/978-3-030-41425-2\_1  
([https://doi.org/10.1007/978-3-030-41425-2\\_1](https://doi.org/10.1007/978-3-030-41425-2_1))

- (6) Loukanova, R.: *Gamma-Reduction in Type Theory of Acyclic Recursion*. Fundamenta Informaticae, Volume 170, no. 4, pp. 367-411, 2019. IOS Press. DOI: 10.3233/FI-2019-1867  
(<https://doi.org/10.3233/FI-2019-1867>)
- (7) R. Loukanova. *Gamma-Star Canonical Forms in the Type-Theory of Acyclic Algorithms*. In: van den Herik J., Rocha A. (eds) Agents and Artificial Intelligence. ICAART 2018. Lecture Notes in Computer Science, book series LNAI. Volume 11352. 2019. pp. 383-407. Springer International Publishing, Cham. DOI: 10.1007/978-3-030-05453-3\_18  
([https://doi.org/10.1007/978-3-030-05453-3\\_18](https://doi.org/10.1007/978-3-030-05453-3_18))
- (8) Loukanova, R.: *Partiality, Underspecification, Parameters and Natural Language*. In: H. Christiansen, M. D. Jiménez-López, R. Loukanova, L. S. Moss (Eds). Partiality and Underspecification in Information, Languages, and Knowledge. 2017. pp. 109-150. Cambridge Scholars Publishing. ISBN (13) 978-1-4438-7947-7; (10) 1-4438-7947-9  
(<https://www.cambridgescholars.com/product/978-1-4438-7947-7>)
- (9) Loukanova, R.: *Typed Theory of Situated Information and its Application to Syntax-Semantics of Human Language*. In: H. Christiansen, M. D. Jiménez-López, R. Loukanova, L. S. Moss (Eds.). Partiality and Underspecification in Information, Languages, and Knowledge. 2017. pp. 151-188. Cambridge Scholars Publishing. ISBN (13) 978-1-4438-7947-7; (10) 1-4438-7947-9  
(<https://www.cambridgescholars.com/product/978-1-4438-7947-7>)
- (10) Loukanova, R.: *An Approach to Functional Formal Models of Constraint-Based Lexicalist Grammar (CBLG)*. Fundamenta Informaticae — Volume 152, issue 4, 2017. pp. 341-372. IOS Press. ISSN 0169-2968 (P) 1875-8681 (E) DOI: 10.3233/FI-2017-1524  
(<https://doi.org/10.3233/FI-2017-1524>)
- (11) Loukanova, R.: *Relationships between Specified and Underspecified Quantification by the Theory of Acyclic Recursion*. In: ADCAIJ: Advances in Distributed Computing and Artificial Intelligence Journal. Regular Issue Volume 5 N. 4, 2016. pp. 19-42. Salamanca University Press. ISSN 2255-2863  
(<https://doi.org/10.14201/ADCAIJ2016541942>)  
([http://campus.usal.es/~revistas\\_trabajo/index.php/2255-2863/article/view/ADCAIJ2016541942/15949](http://campus.usal.es/~revistas_trabajo/index.php/2255-2863/article/view/ADCAIJ2016541942/15949))
- (12) Loukanova, R.: *Situation Theory, Situated Information, and Situated Agents*. In: Transactions on Computational Collective Intelligence XVII. Nguyen, N.T., Kowalczyk, R., Fred, A., Joaquim, F. (Eds.). Lecture Notes in Computer Science, Volume 8790, 2014, pp. 145-170. Springer, Berlin, Heidelberg. ISBN 978-3-662-44993-6  
([https://doi.org/10.1007/978-3-662-44994-3\\_8](https://doi.org/10.1007/978-3-662-44994-3_8))
- (13) Loukanova, R.: *A Predicative Operator and Underspecification by the Type Theory of Acyclic Recursion*. In: Constraint Solving and Language Processing. CSLP 2012. D. Duchier and Y. Parmentier (Eds.). Lecture Notes in Computer Science, Volume 8114, 2013, pp. 108-132. Springer, Berlin, Heidelberg. Print ISBN 978-3-642-41577-7 Online ISBN 978-3-642-41578-4  
([https://doi.org/10.1007/978-3-642-41578-4\\_7](https://doi.org/10.1007/978-3-642-41578-4_7))
- (14) Loukanova, R. and Jiménez-López, M. D. : *On the Syntax-semantics Interface of Argument Marking Prepositional Phrases*. In: Pérez et al. (Eds.). Highlights on Practical Applications of Agents and Multiagent Systems. Advances in Intelligent and Soft Computing, Volume 156, 2012, pp. 53-60. Springer, Berlin, Heidelberg. Print ISBN 978-3-642-28761-9 Online ISBN 978-3-642-28762-6 ([https://doi.org/10.1007/978-3-642-28762-6\\_7](https://doi.org/10.1007/978-3-642-28762-6_7))
- (15) Loukanova, R.: *Modeling Context Information for Computational Semantics with the Language of Acyclic Recursion*. In: Pérez et al. (Eds.). Highlights in Practical Applications of Agents and

- Multiagent Systems. Advances in Intelligent and Soft Computing. Volume 89, 2011, pp. 265–274. Springer, Berlin, Heidelberg. Print ISBN 978-3-642-19916-5 Online ISBN 978-3-642-19917-2 ([https://doi.org/10.1007/978-3-642-19917-2\\_32](https://doi.org/10.1007/978-3-642-19917-2_32))
- (16) Loukanova, R.: *Reference, Co-reference and Antecedent-anaphora in the Type Theory of Acyclic Recursion*. In: Gemma Bel-Enguix and María Dolores Jiménez-López (Eds.). *Bio-Inspired Models for Natural and Formal Languages*. Cambridge Scholars Publishing. 2011. Chapter IV. pp. 81–102. ISBN (10): 1-4438-2725-8, (13): 978-1-4438-2725-6 (a chapter based on 2.2-(54).) (<https://www.cambridgescholars.com/product/978-1-4438-2725-6>)
- (17) Loukanova, R.: *Semantics with the Language of Acyclic Recursion in Constraint-Based Grammar*. In: Gemma Bel-Enguix and María Dolores Jiménez-López (Eds.). *Bio-Inspired Models for Natural and Formal Languages*. Cambridge Scholars Publishing. 2011. Chapter V. pp. 103–134. ISBN (10): 1-4438-2725-8, (13): 978-1-4438-2725-6 (This is a chapter based on 2.2-(55).) (<https://www.cambridgescholars.com/product/978-1-4438-2725-6>)
- (18) Loukanova, R.: *From Montague’s Rules of Quantification to Minimal Recursion Semantics and the Language of Acyclic Recursion*. In: Gemma Bel-Enguix, Veronica Dahl, and María Dolores Jiménez-López (Eds.). *Biology, Computation and Linguistics*. Volume 228. Book Series: Frontiers in Artificial Intelligence and Applications. 2011, pp. 200–214. IOS Press. ISBN 978-1-60750-761-1 (print) 978-1-60750-762-8 (online) (a chapter based on 2.2-(52).) (<https://doi.org/10.3233/978-1-60750-762-8-200>)
- (19) Loukanova, R.: *Syntax-Semantics Interface for Lexical Inflection with the Language of Acyclic Recursion*. In: Gemma Bel-Enguix, Veronica Dahl, and María Dolores Jiménez-López (Eds.). *Biology, Computation and Linguistics*. Volume 228. Book Series: Frontiers in Artificial Intelligence and Applications. 2011, pp. 215–236. IOS Press. ISBN 978-1-60750-761-1 (print) 978-1-60750-762-8 (online) (a chapter based on 2.2-(48).) (<https://doi.org/10.3233/978-1-60750-762-8-215>)
- (20) Loukanova, R.: *Computational Syntax-Semantics Interface*. In: Gemma Bel-Enguix and María Dolores Jiménez-López (Eds.). *Language as a Complex System: Interdisciplinary Approaches*. Cambridge Scholars Publishing. 2010. Chapter Five. pp. 111-150. ISBN-13: 978-1-4438-1762-2 ISBN-10: 1-4438-1762-7 (<https://www.cambridgescholars.com/product/978-1-4438-1762-2>)
- (21) Loukanova, R. and Pavlov, R.: *Situation Semantics Analyses of Some Nominals in Bulgarian*. Current Advances in Semantic Theory. Maxim Stamenov (Ed.) Volume 73. John Benjamin Publishing Company. Amsterdam/Philadelphia. 1992.
- (22) Lukanova (spelling variant of Loukanova), R. *Pseudocombinatory Spaces and Recursiveness in them*. MTA SZTAKI Tanulmányok. Volume 182. pp. 89–96. 1986. (in Russian)

## 2.2 Publications in Refereed Conference Proceedings

- (23) Loukanova, R.: *Semantics of Propositional Attitudes in Type-Theory of Algorithms*. Extended abstract (5 pages). Accepted in the category of [Abstract+Full Paper]. In: Proceedings of the 20th International Workshop of Logic and Engineering of Natural Language Semantics 20 (LENLS20). Hosted by The Association for Logic, Language and Information (FoLLI). pp. 14–18. 18–20 November, 2023.  
<https://lenls.github.io/lenls20/#program>  
<https://lenls.github.io/lenls20/LENLS20OnlineProceedings.pdf>
- (24) Loukanova, R.: *Logic Operators and Quantifiers in Type-Theory of Algorithms*. In: Proceedings of the 19th International Workshop of Logic and Engineering of Natural Language Semantics 19

- (LENLS19). Hosted by The Association for Logic, Language and Information (FoLLI). pp. 82–86. 19–21 November, 2022.  
<https://lenls.github.io/lenls19/LENLS19OnlineProceedings.pdf>  
 The full paper (1) is based on this extended abstract.
- (25) Loukanova, R.: *Algorithmic Dependent-Type Theory of Situated Information and Context Assessments*. In: Omatu, S., Mehmood, R., Sitek, P., Cicerone, S., Rodríguez, S. (eds) Distributed Computing and Artificial Intelligence, 19th International Conference. DCAI 2022. Lecture Notes in Networks and Systems (LNNS). Volume 583. pp. 31–41. 2023. Springer, Cham. First Online: 13 December 2022. Print ISBN 978-3-031-20858-4 Online ISBN 978-3-031-20859-1  
[https://doi.org/10.1007/978-3-031-20859-1\\_4](https://doi.org/10.1007/978-3-031-20859-1_4)  
 (Preprint on ResearchGate)
- (26) Loukanova, R.: *Type-Theory of Parametric Algorithms with Restricted Computations*. In: Dong, Y., Herrera-Viedma, E., Matsui, K., Omatsu, S., González Briones, A., Rodríguez González, S. (eds) Distributed Computing and Artificial Intelligence, 17th International Conference. DCAI 2020. Advances in Intelligent Systems and Computing, Volume 1237. pp. 321–331. 2021. Springer, Cham. ([https://doi.org/10.1007/978-3-030-53036-5\\_35](https://doi.org/10.1007/978-3-030-53036-5_35))
- (27) Loukanova, R.: *Algorithmic Eta-Reduction in Type-Theory of Acyclic Recursion*. In: Proceedings of the 12th International Conference on Agents and Artificial Intelligence. Ana Rocha, Luc Steels, Jaap van den Herik (Eds.) Volume 2, ICAART, 2020. pp. 1003–1010. SciTePress. ISBN: 978-989-758-395-7 DOI: 10.5220/0009182410031010  
<https://doi.org/10.5220/0009182410031010>
- (28) Loukanova, R.: *Computational Syntax-Semantics Interface with Type-Theory of Acyclic Recursion for Underspecified Semantics*. In: Proceedings of the IWCS 2019 Workshop on Computing Semantics with Types, Frames and Related Structures. Rainer Osswald, Christian Retoré, Peter Sutton (Eds.) May 24, 2019 Gothenburg, Sweden. pp. 37–48. Association for Computational Linguistics (ACL). ISBN: 978-1-950737-25-3  
<https://aclweb.org/anthology/papers/W/W19/W19-1005/>
- (29) Loukanova, R.: *Type-Theory of Acyclic Algorithms with Generalised Immediate Terms*. In: Proceedings of the 11th International Conference on Agents and Artificial Intelligence. Ana Rocha, Luc Steels, Jaap van den Herik (Eds.) Volume 2: ICAART, 2019. pp. 746–754. SciTePress - Science and Technology Publications, Lda. ISBN: 978-989-758-350-6  
<https://doi.org/10.5220/0007410207460754>
- (30) Loukanova, R.: *Formalisation of Situated Dependent-Type Theory with Underspecified Assessments*. In: Decision Economics. Designs, Models, and Techniques for Boundedly Rational Decisions. DCAI 2018. Bucciarelli, Edgardo, Chen, Shu-Heng, Corchado, Juan M. (Eds.). Series: Advances in Intelligent Systems and Computing. Volume 805. pp. 49-56. 2019. Springer International Publishing, Cham. ([https://doi.org/10.1007/978-3-319-99698-1\\_6](https://doi.org/10.1007/978-3-319-99698-1_6))
- (31) Loukanova, R.: *Syntax-Semantics Interfaces of Modifiers*. In: Rodríguez S. et al. (eds) Distributed Computing and Artificial Intelligence, Special Sessions, 15th International Conference. DCAI 2018. Advances in Intelligent Systems and Computing, Volume 801. pp. 231–239. 2019. Springer International Publishing, Cham.  
[https://doi.org/10.1007/978-3-319-99608-0\\_26](https://doi.org/10.1007/978-3-319-99608-0_26)
- (32) Loukanova, R.: *Gamma-star Reduction in the Type-theory of Acyclic Recursion*. In: Ana Paula Rocha and Jaap van den Herik (Eds.). Proceedings of the 10th International Conference on Agents and Artificial Intelligence (ICAART 2018) - Volume 2, pages 231–242. 2018. Publisher: SciTePress - Science and Technology Publications, Lda. ISBN: 978-989-758-275-2 DOI 10.5220/0006662802310242 (<https://doi.org/10.5220/0006662802310242>)

- (33) Loukanova, R.: *Semantic Argument Slots in the Type-Theory of Acyclic Recursion and Syntax-Semantics Interfaces in CBLG*. In the proceedings of Logic and Engineering of Natural Language Semantics 14 (LENLS 14), a workshop of the JSAI International Symposia on AI (isAI2017) (<http://www.is.ocha.ac.jp/~bekki/lenls/lenls14/index.html>)
- (34) Loukanova, R.: *Binding Operators in Type-Theory of Algorithms for Algorithmic Binding of Functional Neuro-Receptors*. In: 2017 Federated Conference on Computer Science and Information Systems. M. Ganzha, L. Maciaszek, and M. Paprzycki (Eds.). Annals of Computer Science and Information Systems. Volume 11, pp. 57–66. 2017. Polish Information Processing Society. ISSN: 2300-5963, ISBN: 978-83-946253-7-5 (Web), IEEE Catalog Number: CFP1785N-ART (ART), CFP1785N-USB (USB) DOI 10.15439/2017F465  
 Publisher: IEEE (Digital) (<https://ieeexplore.ieee.org/document/8104512>)  
<https://doi.org/10.15439/2017F465>)
- (35) Loukanova, R.: *Type Theory of Restricted Algorithms and Neural Networks*. In: The Bulletin of Symbolic Logic. Volume 24, Number 2, June 2018. pp. 253–254.  
<https://doi.org/10.1017/bsl.2018.13>)
- (36) Loukanova, R.: *Underspecified Quantification by the Theory of Acyclic Recursion*. In: Trends in Practical Applications of Scalable Multi-Agent Systems, the PAAMS Collection. de la Prieta et al. (Eds.). Advances in Intelligent Systems and Computing, Volume 473, pp 237-249, 2016. (07 June 2016) Springer, Cham. ISBN: 978-3-319-40158-4 (Print) ISBN 978-3-319-40159-1 (Online)  
[https://doi.org/10.1007/978-3-319-40159-1\\_20](https://doi.org/10.1007/978-3-319-40159-1_20))
- (37) Loukanova, R.: *A Formalization of Generalized Parameters in Situated Information*. In: Jaap van den Herik and Joaquim Filipe (Eds.). Proceedings of the 8th International Conference on Agents and Artificial Intelligence (ICAART 2016) — Volume 1, pp. 343–353. SciTePress — Science and Technology Publications, Lda. ISBN: 978-989-758-172-4  
<https://doi.org/10.5220/0005850303430353>)
- (38) Loukanova, R.: *Acyclic Recursion with Polymorphic Types and Underspecification*. In: Jaap van den Herik and Joaquim Filipe (Eds.). Proceedings of the 8th International Conference on Agents and Artificial Intelligence (ICAART 2016) — Volume 2, pp. 392–399. SciTePress — Science and Technology Publications, Lda. ISBN: 978-989-758-172-4  
<https://doi.org/10.5220/0005749003920399>)
- (39) Loukanova, R.: *Specification of Underspecified Quantifiers via Question-Answering by the Theory of Acyclic Recursion*. In: Andreassen et al. (Eds.). Proceedings of the Flexible Query Answering Systems (FQAS) 2015, Advances in Intelligent Systems and Computing, Volume 400, pp. 57–69, 2016. Springer International Publishing. (21 October 2015) ISBN: 978-3-319-26153-9 (Print) 978-3-319-26154-6 (Online) ([https://doi.org/10.1007/978-3-319-26154-6\\_5](https://doi.org/10.1007/978-3-319-26154-6_5))
- (40) Loukanova, R.: *Representing Parametric Concepts with Situation Theory*. In: M. Ganzha, L. Maciaszek, M. Paprzycki (Eds.). 2015 Federated Conference on Computer Science and Information Systems, series Annals of Computer Science and Information Systems, Volume 5, pp. 89–100, 2015, ISBN 978-83-60810-66-8 (Web) 978-83-60810-67-5 (USB) 978-83-60810-65-1 (ART) IEEE Catalog Number: CFP1585N-ART (ART), CFP1585N-USB (USB).  
 Publisher: IEEE (Digital) (<https://ieeexplore.ieee.org/document/7321430>)  
<https://doi.org/10.15439/2015F409>)
- (41) Loukanova, R.: *Underspecified Relations with a Formal Language of Situation Theory*. In: St. Loiseau et al. (Eds.). Proceedings of the 7th International Conference on Agents and Artificial Intelligence, Vol.1, 2015, pp. 298–309. SciTePress — Science and Technology Publications, Lda. ISBN 978-989-758-073-4 (<https://doi.org/10.5220/0005353402980309>)

- (42) Loukanova, R.: *Situated Agents in Linguistic Contexts*. In: J. Filipe and A. Fred (Eds.). Proceedings of the 5th International Conference on Agents and Artificial Intelligence, Vol.1, 2013, pp. 494–503. SciTePress — Science and Technology Publications. ISBN 978-989-8565-38-9 (<https://doi.org/10.5220/0004363004940503>)
- (43) Loukanova, R.: *Algorithmic Granularity with Constraints*. In: Brain and Health Informatics. BHI 2013. K. Imamura et al. (Eds.). Lecture Notes in Computer Science. Volume 8211, 2013, pp. 399–408. Springer, Cham. ISBN 978-3-319-02752-4 (Print) 978-3-319-02753-1 (Online) ([https://doi.org/10.1007/978-3-319-02753-1\\_40](https://doi.org/10.1007/978-3-319-02753-1_40))
- (44) Loukanova, R.: *Algorithmic Semantics for Processing Pronominal Verbal Phrases*. In: Flexible Query Answering Systems. FQAS 2013. H.L. Larsen et al. (Eds.). Lecture Notes in Computer Science Volume 8132. 2013, pp. 164–175. Springer, Berlin, Heidelberg. Print ISBN 978-3-642-40768-0 Online ISBN 978-3-642-40769-7 ([https://doi.org/10.1007/978-3-642-40769-7\\_15](https://doi.org/10.1007/978-3-642-40769-7_15))
- (45) Loukanova, R.: *A Predicative Operator and Underspecification by the Type Theory of Acyclic Recursion*. In: Proceedings of the *Constraint Solving and Language Processing (CSLP)* workshop. 13-14 September 2012, LIFO, the Computer Science laboratory of the University of Orléans, France. (For the extended version, see (13)) (<https://www.univ-orleans.fr/lifo/evenements/CSLP2012/>)
- (46) Loukanova, R.: *Semantic Information with Type Theory of Acyclic Recursion*. In: Huang, R.; Ghorbani, A.A.; Yamaguchi, T.; Pasi, G.; Yen, N.; Jin, B. (Eds.). Proceedings of Active Media Technology. AMT 2012. Lecture Notes in Computer Science, Volume 7669. pp. 387–398. 2012. Springer, Berlin, Heidelberg. Print ISBN 978-3-642-35235-5 Online ISBN 978-3-642-35236-2 ([https://doi.org/10.1007/978-3-642-35236-2\\_39](https://doi.org/10.1007/978-3-642-35236-2_39))
- (47) Loukanova, R.: *Algorithmic Semantics of Ambiguous Modifiers by the Type Theory of Acyclic Recursion*. In: Olivier Boissier, Boualem Benatallah, Mike Papazoglou, Zbigniew W. Ras, Mohand-Saïd Hacid (Eds.). IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology. Volume 3. pp. 117–121. 2012. IEEE Computer Society. ISBN 978-1-4673-6057-9 DOI: 10.1109/WI-IAT.2012.246 (<https://doi.ieeecomputersociety.org/10.1109/WI-IAT.2012.246>) (<https://ieeexplore.ieee.org/document/6511661>)
- (48) Loukanova, R.: *Syntax-Semantics Interface for Lexical Inflection with the Language of Acyclic Recursion*. In: Proceedings of the 1st International Work-Conference on Linguistics, Biology and Computer Science: Interplays (LBCSI 2011), Tarragona, March 14-18, 2011.
- (49) Loukanova, R.: *Situated Propositions with Constraints and Restricted Parameters*. In: Henning Christiansen, Philippe Blache, Veronica Dahl, Jørgen Villadsen (Eds.). Proceedings of CSLP 2011, the 6th International Workshop on Constraints and Language Processing. Computer Science Research Reports, N. 134. pp. 44–55. Roskilde University, Denmark. ISSN 0109-9779 (<http://control.ruc.dk/CSLP2011>)
- (50) Loukanova, R.: *Constraint Based Syntax of Modifiers*. In: Jomi F. Hübner, Jean-Marc Petit, and Einoshin Suzuki (Eds.). IEEE/WIC/ACM International Conference on Web Intelligence and Intelligent Agent Technology. Volume 3. pp. 167–170. 2011. IEEE Computer Society. ISBN 978-0-7695-4513-4/11 DOI: 10.1109/WI-IAT.2011.229 (<https://doi.ieeecomputersociety.org/10.1109/WI-IAT.2011.229>) (<https://ieeexplore.ieee.org/document/6040832>)
- (51) Loukanova, R.: *A New Perspective of Abstract Syntax with the Grammatical Framework GF*. In: Hristo Ganchev, Benedikt Löwe, Dag Norman, Ivan Soskov, Mariya Soskova (Eds.). CiE 2011: Models of Computation in Context. Abstract and Handout Booklet. “St. Kliment Ohridski” University Press. Sofia University. 2011. pp. 134–144. ISBN 978-954-07-3232-9

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## 2.3 Books

- (69) Baynov, D., S. Kostadinov, R. Pavlov, R. Loukanova. *A book on tasks in Discrete Mathematics*. Plovdiv. 1990. (in Bulgarian)
- (70) Chimev, K., R. Pavlov, R. Loukanova. *A book on tasks in Discrete Mathematics*. HPI – Blagoevgrad. 1989. (in Bulgarian)

## 2.4 Publications on Pedagogy

- (1) Loukanova, R.: *Teaching with the Computerised Package Language, Proof, and Logic (LPL)* In: Boute, R and J.N. Oliveira (Eds.). *Formal Methods in the Teaching Lab*. Formal Methods 2006 Symposium McMaster University, Ontario, Canada. Workshop preprints. pp. 101–110. ([https://www.academia.edu/24505627/Formal\\_Methods\\_in\\_the\\_Teaching\\_Lab\\_Examples\\_Cases\\_Assignments\\_and\\_Projects\\_Enhancing\\_Formal\\_Methods\\_Education](https://www.academia.edu/24505627/Formal_Methods_in_the_Teaching_Lab_Examples_Cases_Assignments_and_Projects_Enhancing_Formal_Methods_Education))
- (2) Loukanova, R.: *Teaching Formal Methods for Computational Linguistics at Uppsala University*. In: P. Boca, J.P. Bowen, D.A. Duce (Eds.). *Teaching Formal Methods: Practice and Experience*. 15 December 2006. Oxford Brookes University and BCS-FACS. Proceedings, pp. 57–62. DOI: 10.14236/ewic/TFM2006.11 (<https://doi.org/10.14236/ewic/TFM2006.11>)

## 2.5 Selected Teaching Materials

- (1) *First Order Logic: Syntax, Semantics, and Logic. Atomic Sentences, Boolean Connectives, Quantifiers*  
 Abstract: Introduction to First Order Logic (FOL): lectures developed by me and taught partly on-line, using the LPL courseware: Language, Proof and Logic: Tarski's World, Fitch, Boole, (LPL) by Dave Barker-Plummer, Jon Barwise, and John Etchemendy CSLI Publications, Stanford (<https://www.gradgrinder.net>)  
 File (1ec3-10-FOL-LPL-4up.pdf) at ResearchGate: DOI: 10.13140/RG.2.2.30778.88005 (<https://doi.org/10.13140/RG.2.2.30778.88005>)
- (2) *Computational Semantics. From Leibniz, Ongoing Passion for Life, Math and Computers*  
 Abstract: Initial Lecture Notes on Computational Semantics, in First Order Languages and Logic, and Foundations of Syntax-Semantics Interface  
 File (init-CompSem1.pdf) at ResearchGate: DOI: 10.13140/RG.2.2.24906.85444 (<https://doi.org/10.13140/RG.2.2.24906.85444>)
- (3) *Lecture Notes: Foundation of Computer Science, II*  
 Lecture Notes for courses covering topics on Introduction to Formal Languages, Grammars, and Automata Theory.  
 File (FoundCompSci2-07a.pdf) at ResearchGate:  
 DOI: 10.13140/RG.2.2.19549.28648 (<https://doi.org/10.13140/RG.2.2.19549.28648>)
- (4) Lecture Notes for Advanced Computational Semantics: Logic Foundations of Montague Grammars Muskens' Relational Montague Grammar. Part I-II: The Logics TY2, TT2, and IL. Lectures on Advanced Computational Semantics  
 File (ty2tt2-4up.pdf) at ResearchGate: DOI: 10.13140/RG.2.2.26678.37449 (<https://doi.org/10.13140/RG.2.2.26678.37449>)
- (5) Lecture Notes for Advanced Computational Semantics: a Revision of Montague Grammar: Muskens' Relational Montague Grammar. Part III: PTQ Revised. Lectures on Advanced Computational Semantics  
 File (rev-ptq-4up.pdf) at ResearchGate: DOI: 10.13140/RG.2.2.21645.20961 (<https://doi.org/10.13140/RG.2.2.21645.20961>)
- (6) *Logics for Linguistics*, a series of lectures and seminars (co-organiser and lecturer), see Part 2 (<https://staff.math.su.se/rloukanova/logling>)

## 2.6 Editor

- (1) Loukanova, R., Lumsdaine, P.L., Muskens, R. (Editors). *Logic and Algorithms in Computational Linguistics 2021 (LACompLing2021)*. Part of the book series: Studies in Computational Intelligence (SCI, volume 1081). DOI <https://doi.org/10.1007/978-3-031-21780-7> Publisher: Springer Cham. eBook ISBN 978-3-031-21780-7 Published: 11 March 2023. Hardcover ISBN 978-3-031-21779-1 Published: 12 March 2023. Series ISSN 1860-949X / Series E-ISSN 1860-9503
- (2) Mehmood, R., Alves, V., Praça, I., Wikarek, J., Parra, J., Loukanova, R., de Miguel, I., Pinto, T., Nunes, R., Ricca, M. (Editors). *Distributed Computing and Artificial Intelligence, Special Sessions I, 20th International Conference*. Part of the book series: Lecture Notes in Networks and Systems (LNNS). (DCAI 2023) Volume 741. 2023. Publisher: Springer Cham. Softcover ISBN 978-3-031-38317-5 eBook ISBN 978-3-031-38318-2 Published: 26 July 2023  
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- (4) González, S.R., Machado, J.M., González-Briones, A., Wikarek, J., Loukanova, R., Katranas, G., Casado-Vara, R. (Editors): *Distributed Computing and Artificial Intelligence. Volume 2: Special Sessions 18th International Conference*. Part of the book series: Lecture Notes in Networks and Systems. Volume 332. 2022. Springer International Publishing. eBook ISBN 978-3-030-86887-1. DOI <https://doi.org/10.1007/978-3-030-86887-1>
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- (6) Loukanova, R. (Editor): *Natural Language Processing in Artificial Intelligence — NLPinAI 2021*. Book series Studies in Computational Intelligence book series (SCI), Volume 999. Publisher: Springer, Cham. Hardcover ISBN 978-3-030-90137-0. Softcover ISBN 978-3-030-90140-0. eBook ISBN 978-3-030-90138-7. DOI <https://doi.org/10.1007/978-3-030-90138-7>
- (7) Loukanova, R. (Editor): *Natural Language Processing in Artificial Intelligence — NLPinAI 2020*. Book series Studies in Computational Intelligence book series (SCI), Volume 939. Publisher: Springer, Cham. Hardcover ISBN 978-3-030-63786-6. Softcover ISBN 978-3-030-63789-7. eBook ISBN 978-3-030-63787-3. DOI <https://doi.org/10.1007/978-3-030-63787-3>
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- (10) Loukanova, R. (Editor). *Logic and Algorithms in Computational Linguistics 2018 (LACompLing2018)*. 2020. Book series: Studies in Computational Intelligence (SCI). Volume 860. Springer International Publishing, Cham. ISBN 978-3-030-30077-7 (eBook) ISBN 978-3-030-30076-0 (Hardcover) <https://doi.org/10.1007/978-3-030-30077-7>
- (11) *Journal of Logic, Language and Information*. Loukanova, R. and Moortgat, M. (Editors): Volume 28, Issue 2, June 2019 Special Issue: Logic and Algorithms in Computational Linguistics 2017. Springer Netherlands. ISSN: 0925-8531 (Print) 1572-9583 (Online) <https://link.springer.com/journal/10849/28/2>

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- (14) Christiansen H., Jiménez-López, M.D., Loukanova, R., Moss, L.S. (Editors): *Partiality and Underspecification in Information, Languages, and Knowledge*. 2017. Cambridge Scholars Publishing. ISBN (13) 978-1-4438-7947-7; (10) 1-4438-7947-9  
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