

List of scientific publications by Jyrki Nummenmaa

A Scientific publications with refereeing practice

1. L Duan, L Liu, G Dong, J Nummenmaa, T Wang, P Qin, H Yang, Mining distinguishing customer focus sets from online customer reviews, *Computing*, <https://doi.org/10.1007/s00607-018-0601-1> (currently just the electronic version)
2. L Duan, T Pang, J Nummenmaa, J Zuo, P Zhang, C Tang, Bus-OLAP: A Data Management Model for Non-on-Time Events Query Over Bus Journey Data, *Data Science and Engineering*, 3 (1), 52–67, <https://link.springer.com/article/10.1007/s41019-018-0061-9>.
3. T. Pang, L. Duan, J. Nummenmaa, J. Zuo, P. Zhang, Bus-OLAP: A Bus Journey Data Management Model for Non-on-time Events Query, Proc. APWeb-WAIM Joint Conference on Web and Big Data, 2017 (Item 2 is the extended journal version of this).
4. M. Perez, C. Uribe, J. Nummenmaa, A minimum distortion: High capacity watermarking technique for relational data, Proc IH&MMSec'17, 2017.
5. L. Duan, L. Yan, G. Dong, J. Nummenmaa, H. Yang, Mining top-k distinguishing temporal sequential patterns from event sequences. Proc DASFAA 2017.
6. L. Lu, L. Duan, H. Yang, J. Nummenmaa, G. Dong, P. Qin, Mining distinguishing customer focus set for online shopping decision support. Proc. ADMA 2016.
7. P. Syrjärinne, J. Nummenmaa, Incident detection based on bus data, Proc. 11th ITS European Congress 2016. (Best paper award)
8. Wu, L. Duan, T. Pang, J. Nummenmaa, Detection of statistically significant bus delay aggregation by spatial-temporal scanning, Proc SDMA 2016, APWeb 2016 Workshops, LNCS 9865, 2016, 227-228.
9. F. Fernández, P. Urrutia, J. Nummenmaa. "RETRI: Recuperador Semántico de Fuentes de Datos Heterogéneas". UTCiencia, Vol. 3. Núm. 2. 2016.
10. P. Syrjärinne, J. Nummenmaa, Traffic peak identification based on bus data, Proc. 11th ITS European Congress, 2016.
11. F. Fernández-Peña, P. Urrutia-Urrutia, R. Cañete René, R. Acosta-Sánchez, C. Yáñez-Márquez, A conceptual data model for the automatic generation of data views. *Applied Mathematics and Information Sciences*, (10:4), 2016, 1331-1342.
12. L. Liu, Y. Wang, L. Duan, J. Nummenmaa, Y. Li, C. Tang, Analysis on distinguishing product reviews based on top-k emerging patterns, *Journal of Computer Applications*, 35 (10): 2727-2732 (in Chinese)
13. P. Syrjärinne, J. Nummenmaa, Improving usability of open public transportation, Proc ITS World Congress 2015.
14. P. Syrjärinne, J. Nummenmaa, P. Thanisch, E. Betekhtina, T. Piirainen, J. Lundan: Data based bus schedules, Proc ITS World Congress 2015.
15. P. Syrjärinne, J. Nummenmaa, P. Thanisch, R. Kerminen, E. Hakulinen, Analyzing Traffic Fluency from Bus Data, IET Intelligent Transport Systems.
16. W. Lu, J. Nummenmaa, Z. Zhang: Passive condition pre-enforcement for rights exporting, Proc BIR 2015, 241-254.
17. Reza Ahmadi, K. Rustan M. Leino, J. Nummenmaa: Automatic verification of Dafny programs with traits, Proc FTfJP'15 at ECOOP 2015: 4:1-4:5.
18. H. Yang, L. Duan, G. Dong, J. Nummenmaa, C. Tang, X. Li, Mining itemset-based distinguishing sequential patterns with gap constraint, Proc DASFAA 2015, 39-54,
19. W. Wang, L. Duan, J. Nummenmaa, S. Deng, Z. Li, H. Yang, C. Tang. Mining Frequent Closed Sequential Patterns with Non-user-defined Gap Constraints, Proc ADMA 2014, 57-70.

20. P. Thanisch, J. Nummenmaa, P. Syrjärinne, R. Kerminen, E. Hakulinen, Risking the public transportation connection, Proceedings of Science Track of The 10th ITS European Congress, June 2014, Helsinki Finland
21. P. Syrjärinne, J. Nummenmaa, P. Thanisch, R. Kerminen, E. Hakulinen, Analyzing Traffic Fluency from Bus Data, proceedings of Science Track of The 10th ITS European Congress, June 2014, Helsinki Finland (No 2 is extended version of this.)
22. Z. Zhang, P. Thanisch, J. Nummenmaa, J. Ma, Detecting Missing Requirements in Conceptual Models, Proc. 20th Information and Software Technologies (ICIST), 2014, Springer, 248-259.
23. Li, X., Zhang, Z., & Nummenmaa J. Models for Mobile Application Maintenance Based on Update History. in the Proceedings of the 9th International Conference on Evaluation of Novel Approaches to Software Engineering, SCITEPRESS, 2014, p.212-217.
24. T. Niemi, M. Niinimäki, P. Thanisch, J. Nummenmaa, Detecting summarizability in OLAP, Data and Knowledge Engineering, Jan. 2014, 1-20, ISSN 0169-023X, <http://dx.doi.org/10.1016/j.datak.2013.11.001>.
25. W. Lu, Z. Zhang, J. Nummenmaa, Decision-making in rights exporting: The integrated process, Proc. ACM MEDES'13.
26. Y. Ponce-Toste, M. Pérez-Gort, F. Fernández-Peña, J. Nummenmaa, Ontology-based dynamic building of relational data views, Proc. 4th Int Workshop on Knowledge Discovery, Knowledge Management and Decision Support, 380-387.
27. P. Thanisch, T. Niemi, J. Nummenmaa, Z. Zhang, M. Niinimäki, P. Saariluoma, Incompleteness in Conceptual Data Modelling, Proc. ICIST'2013, 159-172.
28. P. Thanisch, J. Nummenmaa, T. Niemi, M. Niinimäki, Cell-at-a-time approach to lazy evaluation of dimensional aggregations, Proc. DaWaK'2013, 349-358.
29. J. Nummenmaa, M. Marttila-Kontio, T. Nummenmaa, Checking visual data flow programs with finite process models, Proc. SPLST'13, 245-258.
30. J. Nummenmaa, T. Nummenmaa, Z. Zhang, On the use of LTSs to analyze software product line products composed of features, Proc. ISKE'12.
31. J. Guo, Y. Wang, Z. Zhang, J. Nummenmaa, and N. Niu, "Model-driven approach to developing domain functional requirements in software product lines", IET software, 6 (4), 391-401, 2012.
32. Characterizing Trustworthy Digital Rights Exporting, by W. Lu, Z. Zhang, J. Nummenmaa, Proc BIR'12, LNBIP 128, Springer, 85-95.
33. Using a Semantic Wiki to Improve the Consistency and Analyzability of Functional Requirements, by J. Ma, W. Yao, Z. Zhang, J. Nummenmaa, Proc. ICIST'12, Communication in Computer and Information Science, Springer, 460-473.
34. Deploying adaptation in rights exporting, by W. Lu, Z. Zhang, J. Nummenmaa, Proc.CCNC'12, IEEE, 522-526.
35. Mapping a resource description framework OLAP ontology to the business intelligence semantic model, by P. Thanisch, T. Niemi, M. Niinimäki, J. Nummenmaa, Proceedings of 2011 International Conference on Intelligent Systems and Knowledge Engineering (ISKE2011), 2011.
36. Database-driven tool support for DisCo executable specifications, by J. Nummenmaa and T. Nummenmaa, Proc. 11th Symposium on Programming languages and tools (SPLST'11), 2011.
37. Patterns for Activities on Formalization Based Requirements Reuse, Z. Zhang, J. Nummenmaa, J. Guo, J. Ma, Y. Wang, Proc. ISKE'11, Springer, 695-707.
38. Data integration for timely report production at the world health organization, by M. Niinimäki, T. Niemi, S. Martin, J. Nummenmaa, and P. Thanisch, Proc UOII Workshop of 10th International Conference on Perspectives in Business Information Research – BIR'2011, post-workshop proceedings in Lecture Notes in Business Information Processing, Springer.
39. Using the Entity-Attribute-Value Model for OLAP cube construction, by Thanisch, T. Niemi, M. Niinimäki, and J. Nummenmaa, Proc 10th International Conference on Perspectives in

Business Information Research – BIR'2011, Lecture Notes in Business Information Processing, Springer.

40. Z. Zhang, M. Arvela, E. Berki, M. Muhonen, J. Nummenmaa, and T. Poranen (2010), Towards Lightweight Requirements Documentation, *Journal of Software Engineering and Applications* 3(9), 882-889.
41. W. Lu, Z. Zhang, and J. Nummenmaa, "Rights Decomposition for DRM Interoperability", *International Journal of Wireless Communications and Networking (IJWCN)*, 2:2, 139-147, 2010.
42. A generic data model with a decomposition operation for DRM interoperability, by W. Lu, Z. Zhang, and J. Nummenmaa, *Proc IEEE International Conference on Wireless Communications, Networking and Information Security (WCNIS)*, 630 - 634, 2010
43. Automating Support for refactoring SQL databases, by J. Nummenmaa, A. Seppi, P. Thanisch, *Proc. 17th International Conference on Information and Software Technologies (IT2010)*, 2010 343-349.
44. Applying weighted finite state machines to protocol performance analysis, by C. Ionescu, E. Berki, J. Nummenmaa, 2009 South-East European Workshop on Formal Methods, *IEEE Computer Society*, 40-45.
45. A persona method adaptation for requirements engineering in business intelligence reporting, by M. Perez Gort, P. Thanisch, J. Nummenmaa, Z. Zhang, *Research communications of 16th International Conference on Information and Software Technologies (IT2009)*, 2009, .
46. Avoiding anomalies when modeling a many-to-many relationship in a multidimensional database, by P. Thanisch,, T. Lindell, J. Nummenmaa, T. Nummenmaa, in *Proceedings Eighth International Conference on Perspectives in Business Informatics Research, BIR 2009*, 135-146.
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48. Ontologies with Semantic Web/Grid in Data Integration for OLAP, by Tapio Niemi, Santtu Toivonen, Marko Niinimäki, Jyrki Nummenmaa: *Int J. Semantic Web Inf. Syst.*, 3(4): 25-49 (2007)
49. Finding the Permutations Corresponding to a Given young Tableau, by Erkki Makinen and Jyrki Nummenmaa, in *Missouri Journal of Mathematical Sciences*, 19, 2: 84-92 (2007)
50. On selecting a suitable set of reporting platforms, by P. Thanisch, J. Nummenmaa, in *Proceedings of the 5th International Conference on Perspectives in Business Information Research – BIR'2006*.
51. Strategies of Re-Use in Business Intelligence Report Generation and Maintenance, by J. Nummenmaa, P. Thanisch, in *Proceedings of XIII Scientific Convention on Engineering and Architecture (CCIA 13)*, La Habana, Cuba, 2006.
52. Moving towards Domain-Specific Modeling of Software Development by Z. Zhang and J. Nummenmaa, in *Proceedings of the NWUML'2005: The 3rd Nordic Workshop on UML and Software Modeling*, Tampere, Finland, 29-31 August 2005, 167 – 179
53. PARADISIM: A Framework for Modelling Behavioural Simulators for Parallel and Distributed Systems, by Y.C. Nuckchady, J. Nummenmaa, in *proceedings of 2004 Summer Computer Simulation Conference (SCSC'04)*
54. Applying Grid Technologies to XML Based OLAP Cube Construction, by T. Niemi, M. Niinimäki, J. Nummenmaa, P. Thanisch, In D. Theodoratos et al. (eds.): *Proceedings of the International Workshop on Design and Management of Data Warehouses, DMDW'2003*, pages 4-1 – 4-13, 2003.
55. How to draw a sequence diagram, by T. Poranen, E. Mäkinen, J. Nummenmaa, *Proceedings of Eighth Symposium on Programming Languages and Software Tools (SPLTP'2003)*, Kuopio, Finland.

56. An Architecture for Building Collaborative Tools in Java, by Y.C. Nuckchady, J. Nummenmaa, accepted to Eighth Symposium on Programming Languages and Software Tools (SPLTP'2003), Kuopio, Finland.
57. Normalising OLAP Cubes for Controlling Sparsity, by T. Niemi, J. Nummenmaa, P. Thanisch,, Data and Knowledge Engineering. 46, 3. , 2003, 317-343.
58. A Linear-Time Special Case for MC Games, by T. Pronoun, J. Nummenmaa, Fundamenta Informaticae 50, 3-4, , 2002, 315-324
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60. DisCoSim – An Interactive Distributed Commit Simulation and Animation Application, by J. Nummenmaa, P. Thanisch, M. Hakala, S. Kari, J. Ränkimies, E. Salminen, O. Ström, P. Tähkäpää, M. Vakkari, IASTED International Conference on Networks, Parallel and Distributed Processing and Applications 2002 (NPDPA 2002).
61. Practical Distributed Commit in Modern Environments, by J. Nummenmaa, P. Thanisch, In T Gonzalez (ed.) Proceedings of the IASTED International Conference Parallel and Distributed Computing and Systems, August 2001, California, USA, 54-61.
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63. Constructing OLAP cubes based on queries, by T. Niemi, J. Nummenmaa, P. Thanisch, DOLAP 2001, In J. Hammer (ed.): Proceedings of ACM Fourth International Workshop on Data Warehousing and OLAP, pages9-15, ACM, 2001.
64. Applying intensional concept theory to OLAP design and queries, by T. Niemi, J. Nummenmaa, P. Thanisch, In H. Kangassalo et al. (eds.): Proceedings of the 11th European-Japanese Conference on Information Modelling and Knowledge Bases, pages 142-153, 2001.
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67. Applying dependency theory to conceptual modelling, by T. Niemi, J. Nummenmaa and P. Thanisch, In O. Majer (ed.): Topics in Conceptual Analysis and Modeling, pages 271-290, Czech Academy of Sciences' Publishing House Filosofia, Prague, 2000.
68. A query method based on intensional concept definition, by T. Niemi and J. Nummenmaa, In H. Jaakkola and H. Kangassalo (eds.): Frontiers in Artificial Intelligence and Applications: Information Modelling and Knowledge Bases XII, Vol. 67, pages 92-106, IOS Press, 2001.
69. European Student Co-Operation Using Internet within a Project: a Case Study with Special Emphasis in Communication, by J. Nummenmaa, W. Pätzold, M. Dahms, M. Laaksonen, W. Nestler, M.-K. Ojjavainio, G. Paul, P.-O. Svedin, International Conference on Project Work in University Studies 1998, Roskilde , Conference Papers, vol. 1, 142-152.
70. Interactive Simulation of Distributed Transaction Processing Commit Protocols, by S. Ramsay, J. Nummenmaa, P. Thanisch, R.J. Pooley, S.T. Gilmore, In P. Luker (ed.): Proceedings of UKSIM'97, Third Conference of the United Kingdom Simulation Society, 1997, 112-127.
71. Finding Compact Scheme Forests in Nested Normal Form is NP-Hard, by Peter Thanisch, George Loizou and Jyrki Nummenmaa, Information and Computation, 110, 1, 1994, 19-41.
72. MEDUSA – A Multimodal Database User Interface and Framework Supporting User Learning and User Interface Evaluation, by Pentti Hietala and Jyrki Nummenmaa, In Richard Cooper (ed.): Interfaces to Database Systems, Proceedings of Interfaces to

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73. Constructing Compact Rectilinear Planar Layouts Using Canonical Representation of Planar Graphs by J. Nummenmaa. *Theoretical Computer Science*, 99, 1992, 213-230.
74. Yet Another Note on Minimal Covers, by Jyrki Nummenmaa and Peter Thanisch, *SIGMOD Record*, 19, No 3, September 1990, 30.
75. Conjectures and Refutations in Database Design and Dependency Theory, by Jyrki Nummenmaa and Peter Thanisch, In S. Abiteboul and P.C. Kanellakis (eds.): *Proceedings of ICDT'90, Third International Conference on Database Theory, Paris, France, December 90*, *Lecture Notes in Computer Science* 470, 215-228.
76. Constructing layouts for ER-diagrams from visibility representations, by Jyrki Nummenmaa and Jyrki Tuomi. In H. Kangassalo (ed.), *Proceedings of the 9th International Conference on Entity-Relationship Approach, North-Holland, 1990*, 315-329.
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78. Graphic Editors for Knowledge Acquisition and Conceptual Schema Design, by Jyrki Nummenmaa and Ossi Numminen. In H. Kangassalo, S. Ohsuga, H. Jaakkola (eds.): *Information Modelling and Knowledge Bases, IOS, Amsterdam, 1990*, 343-354.

B Scientific publications without refereeing practice

1. J. Nummenmaa, Z. Zhang, T. Nummenmaa, E. Berki, J. Guo, Y. Wang, "On the Generation of DisCo Specifications from Functional Requirements", University of Tampere, Department of Computer Sciences, report D-2010-13, available electronically: <http://www.cs.uta.fi/reports/dsarja/D-2010-13.pdf>
2. Considerations for Internet student projects between geographically distant institutions based on a European project, in *Publication of Future World Conference, Cape Town, 1998, South Africa (Invited talk)*, 8 pages.
3. Layout Algorithms for Fujaba Diagrams, by K. Aaltonen, J. Nummenmaa, T. Poranen, in the *Proceedings of the FUJABA days 2003*.
4. A Database Schema Diagram Plugin for Fujaba, by A. Seppi, J. Nummenmaa, in the *Proceedings of the FUJABA days 2003*.
5. Why Use A Graphical Conceptual Schema as a User Interface to an Application Data Base. In C. Batini (ed.): *Entity-Relationship Approach, Elsevier Science Publishers, B.V. (North-Holland), 1989*, 33-34. (A panel statement)
6. J. Nummenmaa, Z. Zhang, T. Nummenmaa, E. Berki, J. Guo, Y. Wang, "On the Generation of DisCo Specifications from Functional Requirements", Report D-2010-13, University of Tampere, Department of Computer Sciences, available at <http://www.cs.uta.fi/reports/sarjad/D-2010-13.pdf>

C Scientific Books (edited)

1. *Proceedings of SPLST 2015 (14th Symposium on Programming Languages and Software Tools, SPLST'15)*, edited by J. Nummenmaa, O. Sievi-Korte, E. Mäkinen, <http://ceur-ws.org/Vol-1525>, urn:nbn:de:0074-1525-1, ISSN 1613-0073.
2. *Proceedings of the 6th International Conference on Perspectives in Business Information Research – BIR'2007*, edited by J. Nummenmaa and E. Söderström.
3. *Proceedings of the NWUML'2005: The 3rd Nordic Workshop on UML and Software Modeling, 2005*, editors K. Koskimies, L. Kuzniarz, J. Nummenmaa, Z. Zhang, 2005.
4. *IOI'01 Competition*, by J. Nummenmaa, E. Mäkinen, I. Aho (eds), University of Tampere, Department of Computer and Information Sciences, Publication A-2001-7. (Includes also three competition problem descriptions jointly authored by J. Nummenmaa)

G Thesis

1. Designing Desirable Database Schemes., by J. Nummenmaa An academic dissertation. Department of Computer Science, University of Tampere, publication A-1995-1, 1995.